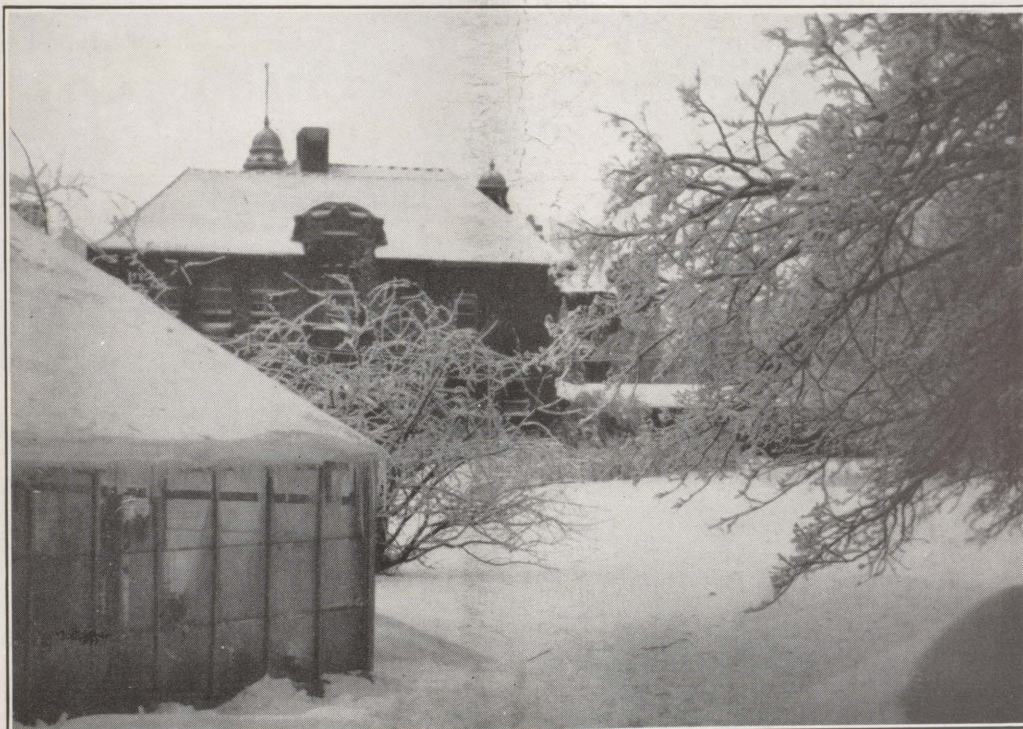


MACDONALD COLLEGE JOURNAL

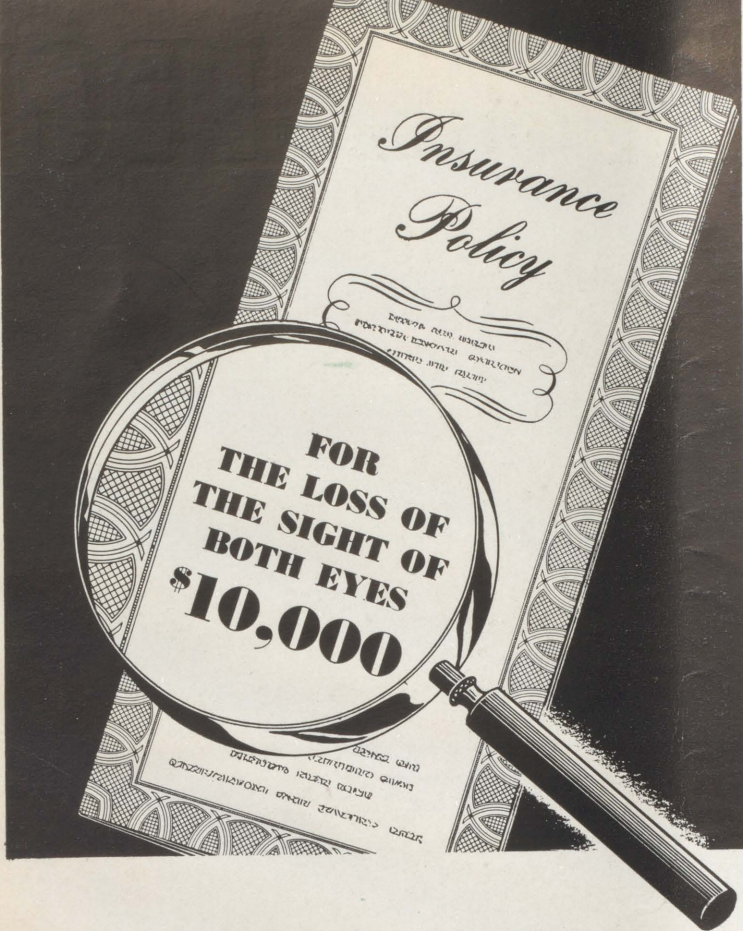


VOLUME 4
No. 5



JANUARY
1944

Farm · Home · School



Insurance policies are very generous when it comes to paying for the loss of eyesight. They count the eyes the most valuable feature of the human make-up. Good lighting is the best kind of sight insurance. Check up on your lamps and sockets today. Some bulbs may be dim—almost burnt out. Some sockets may be empty. Fill them and keep a reserve supply of lamps always on hand. Your eyes will thank you.



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Let's Think It Over

BEGINNING with the New Year the cost of living bonus is to be incorporated in the general wage rates. This makes possible the carry over of the present wage rates into the post-war period. In the meantime bonuses continue to be paid on some farm products in order to keep living costs down. This makes possible and probable the stopping of these bonuses when the war is over.

Cost of living bonuses are to be absorbed in the general wage level and living costs kept low by means of bonuses on some farm products. This is the way high wages for wage earners and low food prices are to be secured.

However this policy may be justified as a temporary emergency measure, it represents an ideal set-up for making sure of unemployment in the post-war period. This is an ideal set-up for making certain of a return of the disastrous condition of the thirties when farmers took their punishment in low prices and industrial workers took their punishment in unemployment rather than lower wage rates.

Returns to farmers have not kept pace with returns to industrial workers during the war years. Farmers have not gone on strike for higher prices for their work but have put in long hours without overtime rates. They have risen nobly to the emergency. They fear that when victory is won bonuses may be withdrawn or lessened as there will be less pressure to have them continued. Prices of farm products will fall first and farther than industrial wages. The purchasing power of farmers will then be unable to maintain industrial employment by buying the products of industry. This will bring about unemployment.

Industry cannot be kept busy by providing electric appliances and gadgets to industrial workers because they have them now. The people who do not have them now are the farmers.

Raising wages in industry and lowering returns in farming is a sure and certain way to cause unemployment. The real employers of labour are the people who

buy the products of labour. The way to make certain of employment is to provide a balance in returns to different industries that enables all to purchase each others goods.

Farmers can get along without modern gadgets because they are used to it. Industrial labour cannot get along without employment.

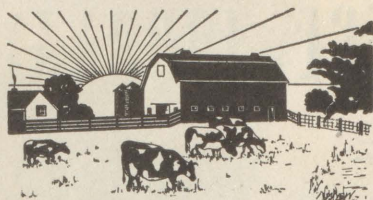
Supplying goods that farmers have been and are going without *might be* the biggest job in the post-war period. This job can only be big provided there is a more reasonable balance than at present prevails in returns in farming and other industries. In the final analysis this is much more of an *industrial* than *farm* problem.

And while we are on the subject of post-war policies, here is part of an article recently written by Gray Turgeon, Chairman of the House of Commons Special Committee on Reconstruction and Re-establishment. Speaking of the relationship between farming, business and government, he says, "There are many people who think that because farm income has increased, agriculture is now on a sound basis. I am convinced that many things must be done before our farmers feel that at the end of the war agriculture will have its proper place in our national economy. There must be created a new relationship between farming and secondary industry, and between farming and government. Farming is part and parcel of our Canadian way of life and is fundamental to it. New credit arrangements must be set up either through credit unions or in some other manner. And the farmer must know in advance that when his production is no longer required for war, neither government nor industry will expect him to produce without fair profit. The result of the United Nations Food Conference must be gratifying to all those whose living comes from agriculture. But in the days of reconstruction we must no longer forget that in agriculture as in secondary industry the price of the product must be based on the cost of production."

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AGRICULTURE

Articles on problems of the farm

The 1944 Production Programme

by The Editor

The tenth in a series of conferences between Provincial Departments of Agriculture and officers of the Federal Government was held in Ottawa early in December. The object of the conference, which was called by the Agricultural Supplies Board, was to work out as complete an agricultural programme for 1944 as possible. As was the case last year, a great deal of preparatory work was done in advance of the conference and a vast amount of information collected and organized. Delegates from the provinces were given detailed analyses of the principal crops grown in Canada. Production figures for the past few years were given, both for Canada as a whole and for each province, and for each crop an estimate was provided of what would be needed for 1944. In setting up the objectives for the coming year the following factors were taken into consideration:

1. Probable total requirements for each community, including exports, needs for priority users and for civilian consumption or reserve stocks.
2. The production for each commodity that might be expected, taking into consideration available land, labour, supplies and other factors.

Each province was advised of the various objectives well in advance of the conference and the delegates were not required to estimate, at the meeting, how much of any one crop their own province could produce: they merely had to advise whether or not it would be possible for that province to reach the goals already worked out.

The Bacon Contract

General dissatisfaction with the terms of the recently announced two-year contract with Great Britain for yearly shipments of 450,000,000 pounds of bacon, at a slightly increased price, were evident. In this connection the visit to the conference of Hon. J. L. Llewellyn, the British Minister of Food, was timely. He visited the conference in the morning of the second day and made a special plea for maintenance of shipments of bacon at a high level. He felt that if Britain could get only the minimum amount called for under the new contract the present British ration of four ounces of bacon a week would have to be reduced.

Commenting later in the conference on the bacon contract, Minister of Agriculture Gardiner explained why the quantities contracted for had been set at a lower figure than in 1942 and 1943. There was only half a crop in Ontario and some parts of Quebec in 1943: there



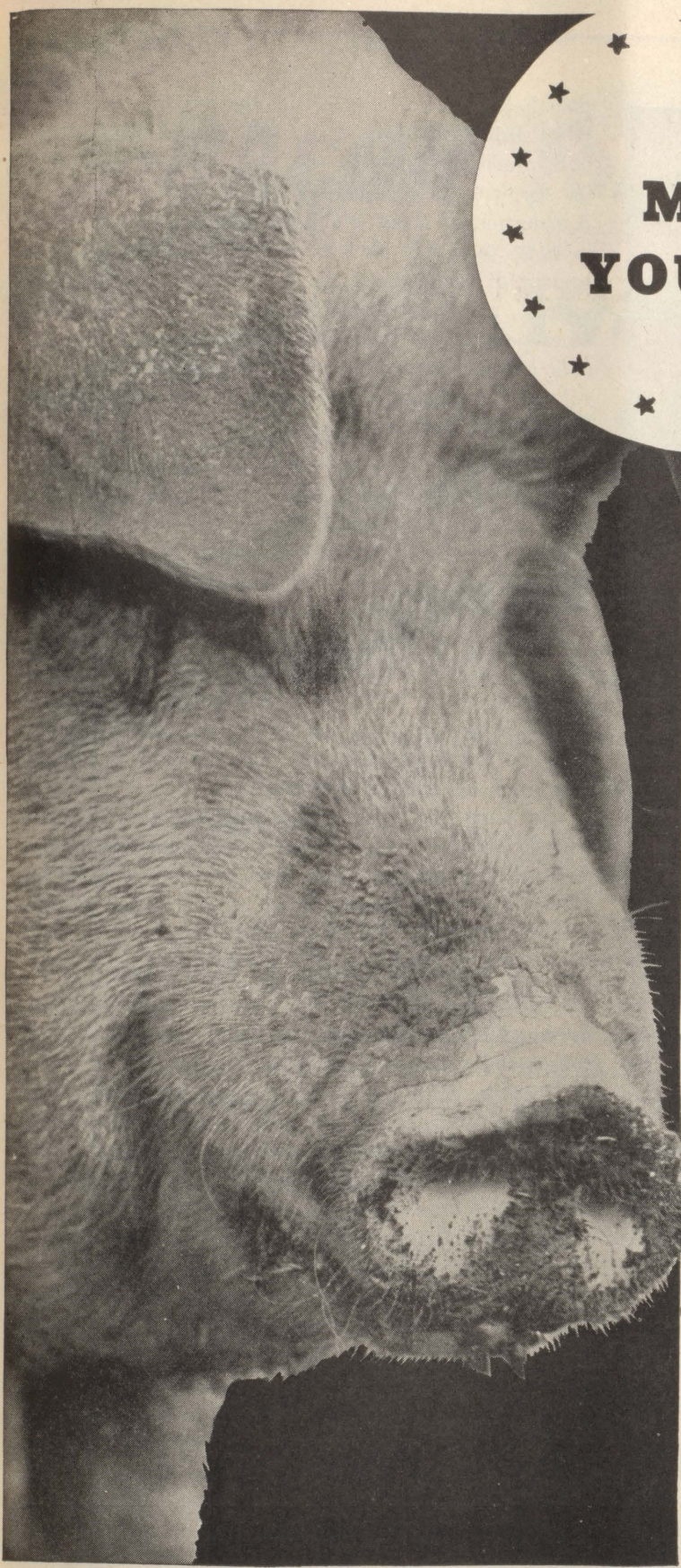
Some of the delegates to the Dominion-Provincial conference. Nearest the camera, from left to right, are J. F. Singleton, Associate Director of Marketing, Dominion Department of Agriculture; Hon. Walter Jones, Premier and Minister of Agriculture, Prince Edward Island. P. D. McArthur, President, Dairy Farmers of Canada; Hon. Austin Taylor, Minister of Agriculture, New Brunswick.

are difficulties in shipping grain from west to east. Farmers are hesitant about breeding the same number of sows in 1944 as they did in 1943. In the face of these facts, it was obviously impossible to *guarantee* to Britain the same amount of bacon as had been sent in the two previous years. Nevertheless he made it abundantly clear that he expected the figure of 450,000,000 pounds to be considered exceeded. According to him, the true objective for 1944 is at least the 1942 figure, 600,000,000 pounds, and he felt reasonably sure that this figure would be reached.

The feed situation also came in for discussion, with most delegates affirming that in their provinces feed was almost impossible to obtain. There appeared to be no agreement as to why such a general scarcity exists when more grain is being milled and shipped than ever before. A promised investigation by the Agricultural Supplies Board may throw some light on the situation.

Detailed objectives

No very startling changes in production schedules for 1944 were suggested. During the war years Canada has steadily increased her production of essential crops, and it appears that in 1943 we about reached the peak of our productive capacity. In most cases the objectives for 1944 suggest a maintenance of present output, with some in-



MY PIGS ARE YOUR PARTNERS

I AM Mrs. Sow. My business is mothering little pigs. Among all the four-footed farm animals I have the highest birth rate. My children grow soonest to market maturity and they make the most meat from a hundred pounds of feed.

Nowhere but on this side of the Atlantic could you have such pigs as mine, and such opportunities as yours. Only our system of free initiative and rivalry in good works could select and develop strains of such pork-producing power. Only under our freedom to own and enjoy private property, and to receive the rewards from its management, can your swine husbandry be so productive and profitable. Only with our freedom to earn and to spend could there be buyers to bid such amounts as you get for my pigs.

So, too, it has been our freedom of invention and industry which creates the farm machinery to produce the crops whereby we are fed. While my breeding has added perhaps fifty percent to the pork produced per bushel of feed, the tractor-powered plow and picker, cultivator and combine have multiplied the bushels produced per hour of labor. Compared with the implements of a generation ago, they enable a man in the same number of hours to grow and harvest two acres of corn, three acres of soybeans, or four acres of small grain. On no other continent, under no other system does one man's work provide feed for so much pork.

★ ★ ★ ★

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GROW MORE FOOD
BUY MORE BONDS
SAVE MORE SCRAP



Minister of Agriculture Gardiner sums up. The photo shows, left to right, Dr. G. S. H. Barton, Deputy Minister of Agriculture, Mr. Gardiner, A. M. Shaw, chairman of the conference and R. S. Hamer, deputy chairman.

creases asked for especially among the more specialized crops. In a few cases a reduction is proposed. In the latter case the objectives represent an estimate of the maximum production considered possible in the light of all present circumstances, rather than the level which would completely meet demands.

In the case of grains and feeds it was first decided to suggest an increase in wheat acreage of 3,500,000 acres in 1944. However, this was changed at the last minute and the final decision was to try to hold wheat and barley acreage at the 1943 level, 17,500,000 and 8,500,000 acres respectively. Oats acreage at 16,377,000 acres suggests an increase of 600,000 acres above 1943 and the objective for rye is 500,000 acres, a slight reduction from the 576,000 acres seeded in 1943. It was considered highly desirable that substantial reserve stocks of feed grains be maintained over the next two years, and the acreage objectives for oats and barley were established with this in mind. Mixed grain objective was set at 20% more than in 1943, corn for husking 53% more, while no change was suggested for hay, clover and alfalfa.

Oil Seed Crops

Considerable increase is projected for oil seed crops in 1944 with the exception of flaxseed. Although the original plan called for approximately the same amount of flaxseed to be produced in 1944 as in 1943, it was generally agreed at the conference that not more than 64% of the 1943 production could be relied on. Production of rapeseed and sunflower seed in 1943 fell short of the objectives, which accounts for the large increase suggested for these crops. An increase of 78% in soybeans had been hoped for, but provincial estimates cut this down to a mere 9% increase.

Dairy Products

Total milk production in Canada in 1944 is not expected to show any substantial change from the 17.4 billion

pounds produced in 1943: with the possible exception of Great Britain, Canada is the only Allied Nation whose milk production in 1943 was maintained at 1942 levels. To supply 1944 requirements this level must be kept up. A reduction of about 3% is in sight for creamery butter in 1944: there will likely be a drop of around 7% in the amount of cheese made, in spite of the need for a 6% increase, and there should be little change in production of evaporated and condensed milk, whole milk and skim milk powder, though there may be slight declines in the volume of condensed whole milk and in skim milk powder.

Live Stock

Inspected slaughtering of hogs in Canada in 1943 total slightly over 6,800,000 head, yielding a total supply of about 897,000,000 pounds of bacon and pork, 80,000,000 pounds of lard and 36,000,000 pounds of pork offals. It was generally agreed that hog production would be down in 1944, and preliminary figures set the probable reduction at close to 10%. However, when all the provinces had been heard from it was evident that not much more than 80% of the 1943 crop could be counted on. However, the chairman suggested leaving the goal at the 1943 level in the hope that this figure would be reached somehow.

An increase of 10% in beef cattle had been suggested. Ontario expects to hold to 1943 levels and Quebec estimated a 5% increase, and these revisions brought the estimated national increase down to 6%. Small increases were projected for veal calves, sheep and lambs.

Provincial Leaders Air Their Views

The closing hours of the conference were given over to short addresses by each Provincial Minister of Agriculture and a summing up by Mr. Gardiner.

Speaking for Prince Edward Island, Mr. Walter Jones pointed out some of the difficulties faced in that province. Transportation difficulties between the Island and the mainland were increasing and there was a steady movement of labour away from the farms into industry.

John A. MacDonald, Nova Scotia, paid tribute to the Department of Labour and to the Army and Navy for providing men for the harvest, without whose help the crop could not have been got in. He asked for adequate floor prices for farm products and urged an upward revision in bacon prices.

Austin Taylor, New Brunswick, said that the new bacon contract would have the effect of making farmers go out of hog raising. He made an urgent plea that nothing be done to reduce the amount of bacon shipped to Britain, and hoped that even at this late date the contract could be revised.

Premier Godbout was unable to attend the conference but Mr. Adrien Morin, speaking for Quebec, stated that the 1944 objectives for this province could be reached. Quebec farmers in general, he said, are satisfied with prices,

(Concluded on page 7)

BACON for BRITAIN

1944

Canada's Guarantee
450 MILLION POUNDS

Canada will try to deliver
600 MILLION POUNDS

to help Britain maintain the present weekly ration of 4 oz. per person. To meet this need every pig possible will be needed and **more sows should be bred now.**

In hog production the largest item of expense is **feed cost.**

Practical trials on a wide scale show that under farm conditions and with good management a pig can be raised to 200 lbs. (150 lb. carcass) on an equivalent of 1000 lbs. of barley or wheat. This includes the sow's feed.

After making a liberal allowance for other costs, such as interest, depreciation and labour, the net returns on grain fed to hogs under good management, should not be less than the amount shown below.

B-1 Hog Price at Farm	Barley per Bushel	per 100 lbs.	Feed Wheat per Bushel	per 100 lbs.
15c.	74c.	\$1.54	\$0.91	\$1.51
16c.	81c.	\$1.69	\$1.00	\$1.66
17c.	88c.	\$1.83	\$1.09	\$1.81

Quality premium or bonus on hogs not included in above.

BREED SOWS FOR BRITAIN

For further information consult your Provincial Department of Agriculture, Agricultural College, nearest Dominion Experimental Farm or Live Stock Office of the Dominion Department of Agriculture.

AGRICULTURAL SUPPLIES BOARD
Dominion Department of Agriculture, Ottawa
Honourable James G. Gardiner, Minister

To Plow or Not to Plow

by R. Summerby

A recent book entitled "Plowman's Folly" written by E. H. Faulkner and published by the Oklahoma University Press, has been given a great deal of attention by the press in Canada, United States and even Great Britain. While few of the ideas are entirely new and the claims presented are supported by very little evidence, the fact that the recommendations are radically different from the practices that are followed and generally recommended in most parts of the world justifies reference to the book in the columns of the Journal.

The object of the book, as stated in the opening sentence, is "to show that the moldboard plow that is in use on farms throughout the civilized world is the least satisfactory implement for the preparation of land for the production of crops".

The argument in the book centers around the idea that the productivity of the soil depends largely on the maintenance of organic matter in the proper place and condition. It is suggested that the organic matter itself, when it decomposes, supplies plant nutrients for the crops, and further helps to make available other plant nutrients that are contained in the mineral part of the soil. The best conditions for this, it is claimed, are found when the straw, stubble, weeds and trash are kept near the surface, as might be done with a disc-harrow. According to his idea, where this is done plant nutrients and moisture are supplied in necessary amounts to produce abundant crops, and losses due to evaporation, to leaching, and to soil erosion are at a minimum.

On the other hand, when the moldboard plow is used it is claimed that the organic matter is covered too deeply, the moisture is shut off, the soil dries out, decomposition of organic matter is hindered, and conditions are favourable for wind and water erosion. In general the author claims that all the conditions favourable to crop production are

hindered by plowing and favoured by the use of implements that keep the organic matter near the top.

The great differences in types of soil, in climate, in crops, in types of farming, and in cropping plans make it impossible in a short article to discuss the applicability of the suggestions made in this book to farms in different parts of the country. It may be noted, however, that the author of the book places no reservations on his proposals, and leaves the understanding that they are generally applicable. On the other hand, it should be said that there are few of his suggestions that are not valid *under particular conditions*.

Few will argue that organic matter is not a very important part of the soil and that very generally it should be maintained at a high level. However, it is not likely to be generally agreed that stubble, straw, weeds, and trash should be kept on the surface. In some places it may be better to keep it at the surface, and at others it may be best to plow it in, as the following illustrations will help to show.

In relatively dry areas of western Canada the repeated preparation of the land for grain by plowing and summer fallowing for many years destroyed the organic matter and refined the soil so that in the dry years of the nineteen thirties enormous losses occurred. The practices that are now recommended are to prepare the land by cultivation alone, keeping the stubble of the previous crop on the surface, controlling weeds, and leaving the soil rough. Plowing of such land would turn the stubble under, allow the soil to dry out, might prevent decomposition, and leave the soil bare and free to be carried away by wind. Under the conditions of soil and climate crops are able to develop satisfactorily. These ideas correspond very closely with those of Mr. Faulkner.

On the other hand, in eastern Canada where the rainfall is much higher, the plowing down of organic matter, whether as farm manure, green manure, stubble or sod, does not prevent it from decomposing readily. There is, furthermore, little danger of the soil becoming excessively dry on this account, and there is seldom loss from wind erosion. The loosening and pulverizing of the soil by plowing in the presence of relatively high rainfall may increase any losses there may be due to leaching and water erosion. However, in eastern Canada the cropping plan usually includes crops which tend to bind the soil. A common rotation including a cultivated crop, grain, clover, hay, and pasture, for example, is down for three years out of five in hay or pasture. In three years out of five the organic matter is being built up and in only two is there likely to be any depletion. Under eastern conditions, therefore, plowing is not harmful in any of the ways suggested and, in fact, cannot be avoided.



The plow is an important tillage implement which we cannot do without.

While it is true in general that the main feeding roots of crops are close to the surface, if conditions for root growth are made favourable to a greater depth, the roots will tend to go deeper. Most of our farm crops benefit by having good moisture conditions, good fertility conditions and good tilth to at least plow depth. The depth of plowing, of course, depends somewhat on the type of soil. The productivity of light soils may be reduced by too deep plowing, but, generally speaking, clay soils are improved by deeper plowing.

In a rotation in which a sod of hay or pasture is developed, plowing is a necessity. After a cultivated crop of corn, potatoes, beans, it is quite possible to prepare the land without plowing, especially on light land. If this is done, the cultivation by whatever implement is used must be thoroughly well done.

With improved implements and power to draw them, it is possible to do with fewer plowings than formerly. Contrary to the view of Mr. Faulkner, however, the writer is convinced that under our conditions in eastern Canada the plow is still an important and useful implement of tillage which we cannot do without. Our need is for better plowing, adapted to the particular purpose and situation in which the job is being done.

PRODUCTION GOALS . . . (Cont'd from page 4)

but something must be done to make feed available.

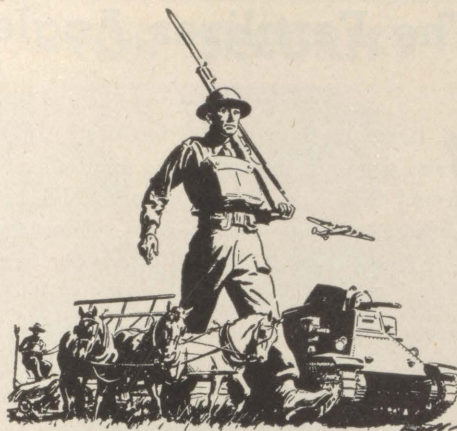
T. L. Kennedy, Ontario, endorsed Mr. Taylor's remarks about the effect of the bacon contract. He claimed that it is now too late to do anything to increase hog production for 1944, but that steps should be taken at once to assure the 1945 crop.

The bacon situation was also the theme of the talk by D. L. Campbell of Manitoba who thought that British needs should come first and who advocated reducing the amount of domestic consumption if that were necessary to assure adequate supplies for the United Kingdom.

J. G. Taggart of Saskatchewan warned of a possible short crop of cereals in Saskatchewan in 1944. There have been five good years including one record year and a break is bound to come. He warned further that by 1945 hog production might not be more than enough for home consumption if the present rate of decline continued.

For Alberta, O. S. Longman reported a successful year and was optimistic about 1944. K. C. McDonald, British Columbia, described something of the seed business of that province which has developed greatly during the past three or four years.

The schoolteacher was having a lesson in grammar with her class. "Johnnie," she said, "what is the opposite of sorrow?" "Joy," said Johnnie. "And the opposite of misery?" "Happiness." "And what is the opposite of woe?" "Giddap!" said Johnnie.



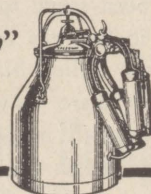
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TIME SAVING

In many cases total milking time is reduced by one-half ... or more ... over older methods of handling the milker. Frequently the number of operators is likewise reduced.

HEALTHIER UDDERS

Fast milking conforms with the natural process of milk ejection and results in healthier udders. The better sanitary control likewise assists in this respect.

THIS IS THE EASILY FOLLOWED DE LAVAL SPEEDWAY METHOD OF FAST MILKING

1. *Be regular*—start the milking at the same time each milking.
2. *Have everything in readiness*—avoid unnecessary noise or confusion.
3. *Preparation of cow*—Thoroughly wipe udder of each cow, just before she is milked, with a clean cloth which has been immersed in warm water (120° F.) containing 250 parts per million of available chlorine.
4. *Use of the Strip Cup*—Next, using a full hand squeeze, draw a few streams of milk from each quarter. Inspect for abnormal milk.
(Steps 3 and 4 induce rapid "let-down" of the milk.)
5. *Apply teat-cups immediately after using Strip Cup.*
6. *Teat-cups should be removed from cow at end of 3-4 minutes.* Hand stripping should be done for purpose of inspection; draw only a few streams from each quarter—don't prolong it. Machine stripping can be done just before removing teat-cups by massaging each quarter briefly.

THE DE LAVAL COMPANY, LIMITED
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VANCOUVER

The Fertilizer Angle of Crop Production in 1944

by L. C. Raymond

When it comes time to buy fertilizers for the 1944 crops — and the time should not be unduly delayed — it will be found that a number of changes have been introduced as compared with former years. These changes — born of necessity — will fall mainly under four distinct aspects. (1) Fertilizer formulae have been materially altered — reflecting the short supply of potash. (2) The overall supply will meet requirements only if the utmost economy is practised. (3) Nitrate of soda will be practically unobtainable and will have to be replaced by some other nitrogen carrier. (4) The bonusing policy, at time of writing, has not been definitely decided on. A brief discussion of each of these points may help to clarify the picture for next spring.

Formulae:

In a much earlier number of the Journal a material change in fertilizer formulae was forecast. Now the change is definitely upon us and we must become accustomed to very different combinations than we have been in the habit of using. It should be clearly realized that the alterations made do not reflect any change in opinion as to crop needs, but are solely due to shortages which it is quite impossible to overcome at the present time. Of the three common fertilizer ingredients — nitrogen, phosphoric acid and potash — it is the latter only that provides the difficulty. Every effort has been made to utilize the available world stocks of potash in the way best calculated to enhance the food stocks of the Allied Nations, and Canada must willingly take her fair share — which we have — and be satisfied.

Thus we will not be able to get such familiar fertilizer formulae as the 2-12-6 and the 4-8-10 until the situation is remedied. These two combinations were used in Quebec formerly to a much greater extent than any others and were well suited to many of our needs. Nobody wants to change them, but there is simply no way out of it, and they have had to be replaced by the 2-12-4 and the 4-8-8

in order to make the reduced potash supply go just that much farther, on the principle that half a loaf is better than no bread.

The 0-14-7 remains without any change as does also the 4-12-6, but a brand new formula for Quebec is found in the 3-18-0 which, of course, does not carry any potash at all. Wherever this latter sort can find a place it should be given a trial since it effects a real potash saving. It should only be used, however, on soils known to have a sufficient store of potash.

Supply:

Since potash stocks are scarce it has the effect of reducing the overall supply of mixed fertilizers. Even the reduced amount going into many of the formulae has not overcome the deficiency. It is therefore imperative that fertilizers should be used in the most efficient way. That doesn't for one moment mean that the rate of application should be automatically dropped all round — that would in many cases be a most inefficient procedure. It does mean, however, that every situation should be carefully studied, and when fertilizers are used the amounts applied should be consistent with a reasonable expectation of a return. Particular emphasis should be laid on economy in potash usage.

While potash scarcity is the main difficulty in keeping up supply it is not the only one. Due to the demand for more and more food stocks, the shortage of farm labour, and the improved cash position of the man on the land, consumption of fertilizers has gone steadily upwards. 1943 saw an increase of some 15-20% over 1942, and the best estimates obtainable would indicate another lift in 1944. With the marked labour shortage and transportation difficulties in addition to the factors already mentioned, this places a heavy load on the industry.

Those charged with the administration of the Fertilizers Act have made a real effort — along with the manufacturers — to meet the situation in the best possible way. No machinery is available to ration the supply to the individual even if it were desirable. In effect, the distribution through the dealers has been rationed since the available stocks are distributed through the various zones on the basis of past usage. Further than that it is difficult to go without very elaborate machinery for control.

With everybody cooperating fully there should be little actual deficiency. Orders for your minimum requirements should be placed early both to insure your own needs and also to give the dealers and transportation facilities an opportunity to serve you.

Nitrogen:

Three carriers of nitrogen have been for many years available on the market. These were nitrate of soda, sulfate of ammonia, and cyanamid. The two latter will still be



Contented cows on a fertilized pasture near Montreal.

available, though sulfate of ammonia will be in limited supply. Both of these products are manufactured within the country. Nitrate of soda on the other hand is largely imported, and has to be brought a long way — from Chile to be exact. As a by-product of our munitions manufacture a new form nitrogen fertilizer is now available which it is believed can and will replace the nitrate of soda and which will cost far less per unit of nitrogen. The new product is known as ammonium nitrate. This product in its present form is so new that too much is not known yet of its all round adaptability. It is a more concentrated form and carries nitrogen in two forms, viz. as nitrate and as ammonia, which is a desirable thing. All experiments and trials to date would indicate that it can replace nitrate of soda, and due to its strength it should be applied at approximately half the rate.

Bonusing:

As every user of fertilizers knows very well, several of the common fertilizers have been bonused during the past several years. This has amounted to from two to four dollars per ton roughly depending on the concentration of the formula. Bonusing was employed both to equalize costs in various parts of the country, but mainly to encourage the production of various agricultural products which were urgently needed in the war effort. The last bonusing arrangement expired in the late fall of 1943, and at time of writing no new policy has been announced. Speculation as to the likelihood of a bonus or not would be idle. Some very apparent difficulties present themselves. While there is still just as great need for food stocks or even more than there was, fertilizers — particularly potash — are becoming scarcer. Bonusing would have the effect of still further emphasizing the shortage. The financial outlay involved is also a very real factor, but by no means as serious a consideration. What will happen may be known before this statement gets into print. Those charged with the responsibility are now attempting to work out a logical solution.

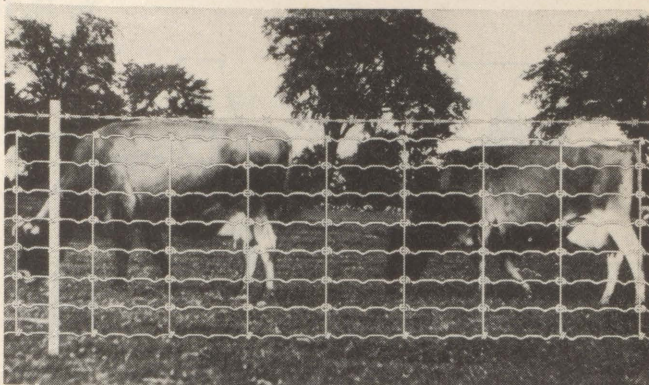
In this brief summary of the changes in the fertilizer situation for 1944, only the more prominent features have been mentioned. Some of these may require modification before fertilizers actually get on the ground again, for the picture changes quite suddenly at times. One can, however, safely say that there never was a time when, along with other farm activities, the fertilizer program should be given more careful consideration to insure the maximum output from the minimum total usage. Think over your own needs, consult your agronomer or any other agricultural officer, and place your order early for just the amount you can put to work efficiently.

"My mother heard a noise in the bedroom the other night. She jumped out of bed and there were a man's feet sticking out from under the bed."

"A burglar's?"

"No, my father's. He'd heard the burglar too."

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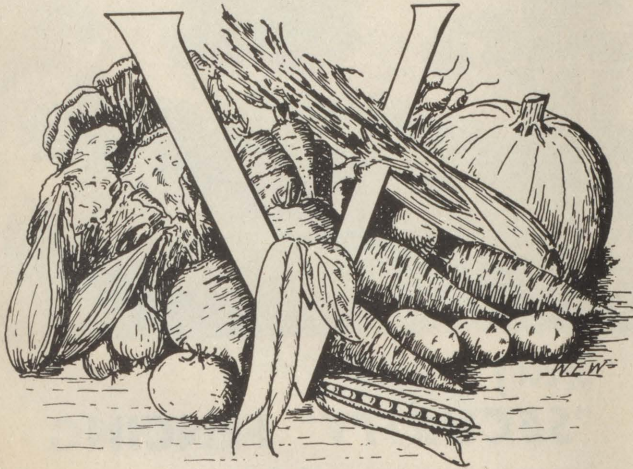
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STEREOTYPERS

Victory Gardens for 1944

by H. R. Murray



The 1943 Victory Gardens of both town and country were, without exception, most successful. They produced many thousands of tons of fresh vegetables with an additional heavy tonnage which was canned in the many community and home plants and fall produce which was stored in various cellars. However, despite this appreciable extra production, which supplemented commercially produced vegetables, many vegetables have been, and are still, in short supply, and are diminishing much too quickly as the winter advances. This scarcity has become quite marked especially in the smaller stores which no longer carry their usual supply of fresh vegetables, and very seldom have any stored or canned products to offer their customers. This means only one thing, and that is, that *everyone who possibly can must have a victory garden in 1944*, and they must plan to produce still greater amounts than were produced in 1943, not only for the summer table supply but also for canning and storing where and whenever possible. This is the only way by which we will insure our own supply for the days to come and at the same time help the general situation by leaving the crops from the commercial farms for the less fortunate who, for various reasons, cannot have a garden.

Location

The first step in planning a successful Victory Garden is to select a suitable location. Your garden should be as close to the home as possible, for a garden located too far away is likely to be neglected. Moreover, vegetables are only truly delectable when "garden fresh" — that is when they are taken straight from garden to pots, or from garden to table. This is possible only when your garden is close at hand, enabling you to harvest a day's supply on that day — not the night before.

Your garden should have good drainage. A waterlogged soil is dead. Plant roots need air (O_2) but they cannot have this if the air spaces of the soil are filled with

excess water. Furthermore, the beneficial micro-organisms of the soil which liberate the plant food also need air in order to live and carry on their beneficial work.

Your garden should be reasonably free from stones. Avoid very stony land or land which has flat stones close to the surface. Stony land is hard to work and shallow soil (land with flat stone near the surface) dries out very quickly.

Your garden should not be shaded, especially from the early morning sun. The late afternoon sun is not so important. Therefore, choose a location without large trees running from the east to south, which will cast a shadow on the plants during the morning and the early part of the day. Large trees will rob the garden also of much needed plant foods and moisture if seeding or planting is carried closer to the trees than a distance equal to their height.

Perhaps by now you are wondering how much land you will require. You can estimate this best if you will remember that a standard city lot measuring 25' x 100' is generally regarded as the right size to supply summer vegetables for a family of five. If you are a smaller family, half a lot would probably be sufficient.

Finally, we come to the question of soil. Usually there is no choice but if there should be a choice consider the soil in the same light as you would consider your house. If you have a good house the management is reasonably easy, if you have a poor house it is more difficult. Soils, with the exception of the truly organic type, are made up largely of (a) broken-down rocks, generally known as the mineral portion — and (b) a small amount of the decaying remains of dead plant and animal life — known as the organic portion and commonly called humus. Both portions are important to plant growth. Cultivated plants growing in soils break down the organic portion of the soil and at the same time remove certain materials. If these materials are not consistently replaced by manure and/or commercial fertilizers the soil is considered to be poor or low in fertility and will need building up, if it is to produce good crops of high quality.

Soils are usually divided into 3 general groups, light, medium and heavy. Light soils, although very early, are usually poorer in fertility and require watering during dry spells; heavy soils on the other hand are late and usually contain considerable quantities of clay which make them hard to work, especially in the early spring and after rains as they are sticky and bake. The best soil is a medium or medium to light soil, commonly called a sandy loam.

The next article in this series will deal with the layout of the garden and will include detailed planting plans for large and small gardens.

Food: The First Essential in Building a New World

by F. S. Thatcher

Adopted from "The role of food in post-war reconstruction" by Sir John Boyd Orr.

Food — food to give an adequate diet — must be the foundation upon which we may build a world that enjoys the "four freedoms": the only kind of world in which we can hope for lasting peace. This truth has been emphasized by the United Nations Food Conference and has been further highlighted in the booklet mentioned above by Sir John Boyd Orr, who is an internationally known authority on nutrition and also a philosopher and economist of some note. We are in good company, then, when we follow Sir John's thoughts on post-war food problems. These are the problems whose solutions ought to be planned now, so that all those concerned in food production might well ponder awhile along with Sir John for he unfolds a food plan that, as he points out, could be a useful starting point for work in post-war reconstruction. It is a plan, too, that paints a picture of optimism and fair-play for the farmer in the future, both of which have been none too common in the past.

Sir John points out first that *"We dare not reconstruct on the old model"*. "The old model broke down in a world war, twice in one generation". "Reconstruction of the old model would inevitably bring about another breakdown". Science is thrusting us into a new age. Our political and economic structures must be adjusted accordingly. Even our economic theories no longer apply in their entirety. To support any new democratic venture we need a well-informed public opinion, and it is to this end that Sir John's plan is offered in simplified form.

First, what benefits are to be derived from a well planned food policy? Health and food are directly inter-related so let us look at the effects on health first. An adequate diet is the foundation of health. Experiments show it to be the most important health factor. "As the diet becomes worse, health and physique become worse." In Britain, the people who are worst fed show a mortality rate of 30 per 1000. The rate for the adequately fed is 9 per 1000. Infant mortality is 100 per 1000 among the poorly fed; 20 per 1000 among the adequately fed. "Some diseases, such as tuberculosis, are two or three times as prevalent. Stature is 3 or 4 inches shorter. Other factors much higher among the poorly fed are defective sight and hearing, premature senility, and the proportion of children mentally defective or backward. On humanitarian grounds alone we *must* have a bold new food policy. By proper feeding "we would save more man-years of life in one decade than have been lost in all the wars of the last hundred years."

The chief cause of malnutrition is poverty. That means that the high cost of a diet adequate for health is one of the causes of poverty and malnutrition. That is another factor our plan must alleviate. "There is no measure which

would do more for the promotion of human welfare than bringing a diet adequate for health within the reach of every family."

The effect on Agriculture would be far reaching. A policy of producing for adequate nutrition would call for greatly increased production. It is estimated that the United States in order to feed her people according to an adequate nutritional standard would require an increase of 40 million acres devoted to food and feed crops. (Assuming the same degree of productivity per acre, which, however, could easily be increased.) The Atlantic Charter calls for an adequate diet "for all the men in all the lands". This obviously will provide a market for all the food which all countries can produce for many years. "A world food policy undertaken on humanitarian grounds would thus inevitably bring about an expanded and prosperous agriculture."

This expanded agricultural production would have its beneficial effect on industry. The majority of farms would need to produce at a higher level. This would call for a vast quantity of new equipment. In backward countries new industries would be required, and new transport and electrification facilities developed.

What is the plan that could bring about these advances without floundering in the pitfalls that our old set-up invariably places in the path of progress?

First, each nation would need to set up an organization which would determine the quantities and types of food required to provide a nation-wide adequate diet. The foods would vary according to the habits of the peoples concerned. Every individual has the same requirement of the essential nutritional factors. "A child in the poorest family needs the same amount of protein to form muscle, of calcium and phosphorus to form bone, and of all the vitamins and other food constituents, as the child of the millionaire. A child born in China or Africa has the same food requirements as a child born in Europe or America." However, the essential nutrients required can be supplied by many different kinds of food, national preference and availability being the chief factors to consider.

With this step established an international organization should be set up to plan cooperation between nations in the regulation of food production and in the pertinent trade between nations.

The national organization suggested is one designed primarily for Britain, but its application in general in Canada would seem practicable.

First there should be a National Food Board appointed by the government and composed of men financially independent of the food trades. The work of the National

Food Board should be: (1) to see to it that there is a sufficient national supply of the main foodstuffs to be able to provide enough for everybody; (2) to fix wholesale prices so that an adequate diet would be within the purchasing power of every family. The necessary funds to carry out these functions should be voted by parliament.

The National Board would work through a number of Commodity Boards each being responsible for related commodities such as milk and dairy products, beef and mutton, eggs and poultry, bacon and pork, fish, cereals and feeds. The Commodity Boards would be the main wholesalers for the foods they handle. They "would control and ultimately own the key points of food distribution," that is, the processing centres such as meat packing plants, milk depots, canning factories. Each of these should have its own storage facilities.

The Commodity Boards *would offer the producer a guaranteed market and also a guaranteed price* calculated to be attractive enough to make the producer intent on raising the total amount needed. The Commodity Boards would then sell to the trade at a wholesale price calculated to make the food available to the public at a price within

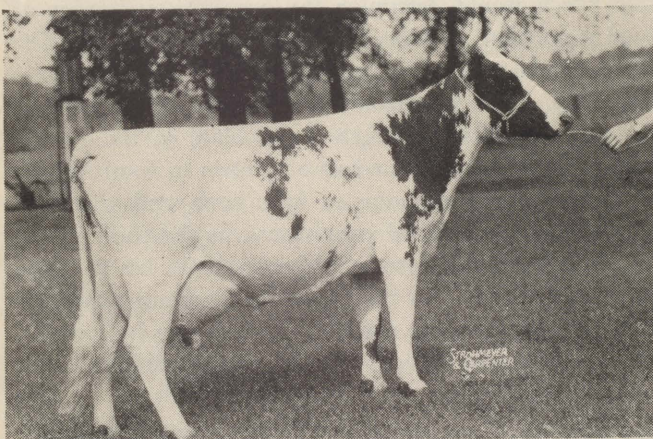
the reach of the poorest. Any difference between the price necessary to satisfy the producer and that received by the Board from the trade would be made up by funds from the National Board, i.e., from parliament. The Boards would therefore be able to maintain a constant price to the consumer all year round, though at the same time able to pay the producer a higher price during seasons of higher production cost.

With this guaranteed price and guaranteed market farmers would thus be in a position to organize their production on a long-term basis and would be able to decide upon and follow the type of agriculture most suited to their farms, instead of "chopping and changing in an attempt to catch fluctuating market prices."

Planned food production such as this is the step necessary to bring about "production for use" so that the resources of a country may be made available to the people.

"A food policy can be the spearhead of a government for agricultural and economic prosperity," and "will lead to a great expansion of agriculture, industry and trade which will be stable and permanent because it will be based on the sure foundation of human welfare."

A GOOD RECORD



The Ayrshire cow, Macdonald Dosie 2nd, shown above, has recently completed an R.O.P. record of 22,522 pounds of milk testing 4.43%, which gives her credit of 998 pounds of butterfat in 365 days. In her second lactation, she produced 20,148 pounds of milk and 806 pounds of butterfat in 365 days, while in her first lactation as a two year old in 305 days she produced 12,310 pounds of milk and 509 pounds of butterfat. During her first lacta-

tion she was milked twice per day, while during her second and third lactations, she was milked three times per day. This gives her a total of 54,970 pounds of milk and 2,313 pounds of butterfat in her first three lactations.

It is interesting to note what this cow consumed during the 365-day test just completed. Although her feed was not weighed each and every day, it was weighed quite regularly so that monthly reports were made on her feed consumed. Like all high producing cows, Macdonald Dosie 2nd is a great feeder. For these who habitually think in terms of daily feed consumed, the following will probably come nearest to her consumption per day, at least during the greatest number of days during which she was producing most.

Home made meal mixture (14% protein)	12 lbs.
Beet pulp soaked	6 "
Linseed oil meal	1 "
Silage and roots	30 "
Hay	12 "

The consumption for the 365 days totals as follows:

Meal	4140 lbs.
Beet pulp	1822 "
Linseed oil meal	355 "
Silage and roots	6450 "
Hay	2802 "
Pasture	164 days

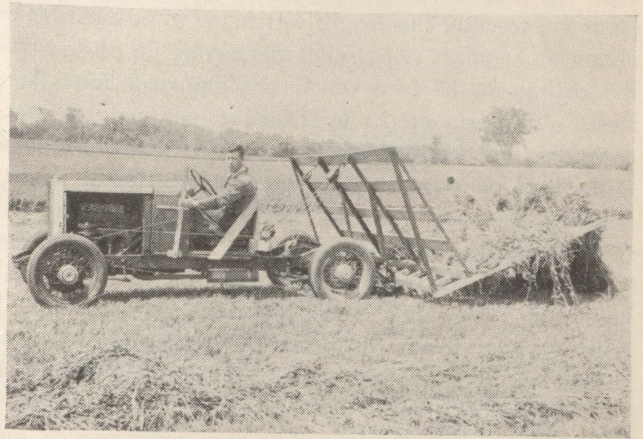
A Power-Lift Buck Rake

by J. H. Cooper

The power-lift buck rake illustrated here was built by the Agricultural Engineering Department at Macdonald College and was tried out during the past summer on the Provincial Seed Farm at St. Anne de Bellevue, Que., bucking 32 acres of green clover with an average yield of 10 tons per acre. It was also used to gather about 12 acres of oat stooks.

Some of the details of construction of the rake might be of interest, although any farmer who is thinking of building one should secure Information Stencil No. 27, which contains the detailed blueprints and mimeographed instruction sheets. These may be obtained from the Department of Agricultural Engineering, Macdonald College, P.Q., for the sum of thirty cents. The rake teeth were 12 feet in length and were bolted "on the flat" to the frame by means of $2\frac{3}{8}$ inch bolts in each tooth. One of the hard woods, such as oak or hickory, is suggested as the most suitable material for teeth, but Douglas fir or long leaf yellow pine may be used if the first is unobtainable. The teeth are tapered from 4 inches at one end to 2 inches at the other end, and are sharpened at the ends to pick up the hay cleanly; this tapered tooth may be made by ripping a piece of lumber 2" x 4", 12 feet long, to obtain a single tooth, or by ripping a piece 2" x 6" — 12 feet long, diagonally, to get two teeth. The latter method is more saving of lumber. The sharp tooth-ends should be protected by special steel points, which are obtainable from several manufacturers of agricultural machinery. After ripping and rough finishing the teeth should be planed and sanded smooth on all sides, so that the hay will slide easily on and off the rake. It is also important that the tooth points be closely fitted to the teeth so that they present no sharp edges or corners which will catch the hay.

While a welded steel frame is without doubt lighter and stronger and more easily assembled, the scarcity of structural steel shapes requires that it be built of some material which is more readily available. A strong, tough hardwood, such as oak, may be substituted. The teeth are bolted to the two oak crosspieces of the frame — 3" x 4" or 4" x 4" by 10' 6" long; the upright stop frame is also attached to them. The rake is carried by two heavy angle irons, bolted to each cross-piece and connected to the car chassis by means of hinged joints to permit lifting and lowering of the rake. Two shorter side teeth are placed on each side of the rake to prevent the hay from spilling or dropping off the side. An old steering gear housing, with worm and full or complete worm gear was used as the basis of the power-lift mechanism. Power from the engine was delivered to this lift device by means of a "V" belt and pulleys. The driven pulley drove the worm which turned the worm gear, to which a winding or hoisting drum was fitted. The final ratio of reduction of engine speed to



This is the buck rake described in this article working in green clover. There is half a ton in the small load on the rake: bigger loads are possible working in dried hay.

winding drum was about 19 to 1. With the load in the lifted position, this type of gearing is "self-locking", that is, the winding drum will not turn backwards and allow the load to drop; but the power from the engine must be disconnected to prevent the rake from lifting further. This was accomplished by placing a binder-knotter clutch between the driven pulley and the worm gear and releasing the clutch and the power to the lifting device when desired. To allow the load to drop, a friction clutch between the winding drum and worm gear is released. This power-lift device can be adapted with some slight alterations so that it can use the power take-off drive equipment of standard tractors in place of the "V" belt drive.

Tractor buck rakes should be mounted in front of the tractor and have a separate set of wheels and axle to carry the load to prevent overloading of the tractor front wheel tires and bearings. This requires that the rake wheels be turned in the same direction and through a greater angle than the tractor wheels to obtain accurate steering control. Details as to steering arrangement and hookup are given in Information Stencil No. 27, for the majority of tractors.

Power-lift devices usually have a system of blocks and tackle connected to the chassis and to the top of the rake frame to increase their lifting capacity. Usually the number of pulling ropes is 2 or 4; it was found in this installation that a greater number of pulling ropes was required. This was increased to 7 to obtain the necessary lift. Flexible wire rope was used here; as it was impossible to obtain the recommended $\frac{3}{8}$ inch size, the $\frac{1}{4}$ inch size was used with no failure of the smaller rope.

The buck rake was placed on the rear of the stripped-down auto chassis and the machine was loaded by backing it into the windrow of hay. It was found that a speed of at least 10 miles per hour was necessary to get the hay to

pile on to the rake properly; at slower speeds the hay had a tendency to bunch up at the ends of the rake teeth. When a load of from 800 to 1,000 pounds was picked up the rake was lifted so that the tooth ends were about 3 feet from the ground. This height was found to be advisable to eliminate, as much as possible, the stirring up of dust and its settling on the load when travelling over dusty farm roads. At speeds of 20 to 25 miles per hour or over, depending on the road surface, the load was then driven to the barn or hay-stack where it was unloaded by merely dropping the rake down to the ground and driving the auto ahead, the load remaining where deposited. If the hay was being mowed away into a barn, the load was dropped on to a rope sling which had been previously placed under the rake. It was found that the regular harpoon type hayfork was unsatisfactory in handling the loosely packed hay. The double grapple type hayfork was better than the harpoon type, but the rope sling was recommended for this purpose. To unload at the stock, forks or slings may be used; but if a large amount of hay is to be handled the use of a hay-stacker, either of the swinging boom or Over-shot type is recommended. Here the load is transferred from the rake to the stacker which drops it on the stack.

Some makers prefer to have the loading done while the machine is being driven forward so they attach the rake to the front of the car. This has the advantage of ease in loading, but generally it is considered better design to place the rake on the rear, as only about one-tenth of the total driving time is required for loading; for the remainder of the time the machine is driven forward where the advantage of better vision, better control, more adequate support for the weight on the heavier rear wheel bearings and uninterrupted flow of air through the radiator to keep the engine cool, are apparent. Another advantage is that the heavy load on the rear is counterbalanced by the weight of the engine on the front of the car. Another buck rake designer hit upon the novel idea of inverting or turning over the differential of the auto to obtain the same speeds in reverse as the auto previously had in going ahead; but this involved rather a complicated control system which tended to offset any advantage in the completed rake.

The unloading of the rake was simple and rapid. To unload, the rake was dropped on the ground with the rake stopped, then the rake was moved ahead and the load remained where deposited. Occasionally, the load had to be held by a man with a fork when the rake was moved ahead; this was overcome by leaving about a 6 inch depth of loose material below the point where the load was dropped. This difficulty was due to the nature of the green clover and is not present to the same extent with dry hay.

The old auto on which the rake was mounted, could be classed as a light-weight vehicle. Undoubtedly, this lightness and consequent lack of traction was the cause of considerable difficulty experienced from slippage of the drive wheels when the ground was wet or muddy. In an effort to

overcome this, tire chains were attached to the drive wheels; they helped but were not entirely successful. It is considered that a heavy auto or light truck would be a much better power unit with sufficient traction to overcome all but the most adverse soil conditions. Of course, this factor is not so important in bucking dried hay, as the ground surface then would be hard and dry enough to get the needed traction.

The power lift unit performed satisfactorily within its definite lift limits, i.e., up to but not much more, than a 1000 pound load carried on the rake. Overloads caused the drive belts to slip with consequent wear and occasional breakage. Ordinary engine oil did not provide an adequate oil film to prevent metal-to-metal contact of the worm and worm gear. The solution to this lubrication problem was the use of the "extreme pressure" (E.P.) gear oils, which lubricate the hypoid gears of modern cars. The housing enclosing the gears must be tightly sealed to prevent leakage of the gear lubricant.

The same set of teeth was used throughout all the tests, showing that tooth design and position of the rake while loading, were satisfactory.

Dr. Mark Barker Veterinary Chief

Appointment of Dr. Mark Barker as Veterinary Director General was announced recently by the Federal Department of Agriculture. He succeeds Dr. A. E. Cameron who retired in March, 1943.

Dr. Barker is highly respected by his professional associates both in private practice and the public service. He is a member of the American Veterinary Medical Association, the Central Canada Veterinary Association, past president and honorary life member of the Veterinary Association of Saskatchewan, a member of the United States Live Stock Sanitary Association and the Canadian Society of Technical Agriculturists. He was formerly president of the South Saskatchewan branch of the C.S.T.A.

Dangers to Young Pigs

According to a report just released by the Committee on Swine Diseases of the American Veterinary Medical Association, the four dangerous "D's" in the lives of young pigs are drafts, dust, dampness, and dirt. The report says that farmers can save more pigs if they will beware of these four dangerous "D's" and be sure that the pig houses are warm, dry, well-ventilated, and free from dust, and that young pigs are kept away from contamination of the old hog lots.

"Tommy," said the teacher, "what is a synonym?"
"A synonym," said Tommy, "is a word you use when you can't spell the other one."



DEPARTMENT OF AGRICULTURE

Activities, Plans and Policies of the Quebec

Department of Agriculture

Professor Rice of Massachusetts Addresses Live Stock Workers in Quebec

by A. R. Ness

The Honourable Adelard Godbout, Prime Minister and Minister of Agriculture of the Province of Quebec, and his Deputies in the Department of Agriculture, Dr. Adrien Morin and Mr. Raoul Dionne, were responsible for organizing a unique conference on the subject of animal breeding. Provincial and Federal workers and representatives from the agricultural institutions in the Province working in animal husbandry were invited to hear Professor C. V. Rice.

C. V. Rice, who is Professor of Animal Husbandry at the Massachusetts State College, has made a specialty of the subject of animal breeding. He is the author of a book on the subject, entitled, "Breeding and Improvement of Farm Animals", the Third Edition of which appeared in 1942. An interesting association to relate is the fact that the Prime Minister and his Deputy, Dr. Morin, each obtained part of their instruction from Professor Rice when undertaking post graduate studies at the Massachusetts State College.

Mr. Raoul Dionne occupied the Chair and called upon Dr. Morin to introduce Professor Rice. In his opening remarks, Professor Rice made reference to the numerous old superstitions existing in the minds of breeders, such as maternal impressions, telegony, and blood influences of the dam as compared to the sire, the inconsistencies of which were clearly demonstrated in the course of the conference. The structure of both the male and female genital organs were clearly pictured on a blackboard, particularly for the purpose of acquainting the audience with this reproductive mechanism and at the same time to point out the origin of the female egg cell or ovum, and the male sperm or spermatozoa.

What happens at the union of the male sperm and female egg, the halving and sampling process of the hereditary materials, was clearly demonstrated. He pointed out the method of the use of a herediscope to illustrate the chance combinations of hereditary determiners and the probable contribution of the germ plasm of each parent. Professor Rice was very strongly of the opinion that all breeders should be much more familiar with the physiological make-up of the reproductive organs of the animals with which they are working and the mode of transmitting hereditary characters from one generation to the other.

The subject of inbreeding, close breeding, and cross breeding occupied a considerable portion of time, as many questions upon this phase of the work were asked by those present. Cross breeding had some advantages particularly in the production of market animals, while dairy cattle breeders, it was pointed out, had a great opportunity to concentrate the hereditary material of some of their best families by closer breeding than was generally practiced. The capitalization of the effect of heterosis or hybrid vigour, particularly with market animals was quite possible but Professor Rice felt that with the records now available on our dairy breeding animals that the breeders of this class of stock were faced with the problem of producing germ plasm of greater homozygosity and that this could only be done by closer breeding and in many cases inbreeding.

Probably the most interesting feature of the conference was the more applied aspect of the subject when Professor Rice explained his "three sire series" of pedigree appraisal*. In this case instead of allotting 50 percent to the influence of the sire and 50 percent to the influence of the dam, Professor Rice uses a method whereby 50 percent is allotted to the influence of the sire, 25 percent to the influence of the maternal grandsire, 10 percent to the influence of the maternal great grandsire and only 10 percent to the influence of the dam and 5 percent to the granddam. Professor Rice expressed a feeling that at present too much emphasis is being placed upon the milk and butterfat record or records of the immediate dam of a particular sire and that more recognition should be given to the dam's sire because of the fact that, providing sufficient records are available on the part of his daughters, a much more accurate sample of the hereditary material involved can be obtained from the dam's sire as compared to the dam, since after all the dam is only one sample of her sire's progeny. Professor Rice expressed clearly the necessity for complete records of all of the animals in the dairy herd and a thorough analysis of the records of all of the daughters of a sire upon a daughter-dam comparison. He was rather

*For further information on this topic, see articles by Professor Rice in different breed journals:

The Jersey Bulletin, July 5 and July 20, 1943.

The Holstein-Friesian World, July 31 and August 14, 1943.

The Ayrshire Digest, October 15, 1943.

fearful of results which depend upon the appraisal of males and females on the basis of a selected few of their progeny, and strongly advocated the use of the entire or at least an unselected population. An analysis of the milk, butterfat and type classification records of the different female families together with the sires, comprising the four dairy breeds maintained at the Massachusetts State College, was presented for study on the basis of pedigree appraisal suggested by Professor Rice.

Sixty Agricultural Scholarships

Each year the Department of Agriculture grants scholarships to deserving junior farmers, entitling the holders to a year's free study at an agricultural school. This year about sixty young farmers, including four young women, who will study homemaking, have been granted scholarships.

These scholarships are given to members of Junior Farmers' Clubs. To be eligible an applicant must have taken a definite interest in short courses and field days: must have carried on some sort of project in crop or animal raising: must have shown himself able to keep accurate records of his project: must present a detailed record of his farm operations during a complete year and finally, must be of a type that will benefit from further instruction.

The number of scholarships given in each agronomic district depends upon the number of clubs in that district, and the winning candidates are selected according to merit by the local agronomer and the junior club fieldman for the division.

Leo Boudrias Wins Silver Medal

The winner of the silver medal in the junior division of the Agricultural Merit Competition this year is Leo Boudrias, of Notre Dame de Poitmain in Labelle County. The presentation of the medal and the prizes that go with it (twenty dollars in cash and a year's free tuition at an agricultural school), was made recently at the Mont Laurier School of Agriculture. Mr. J. A. Rioux, chief of the Agricultural Associations Division of the Department of Agriculture, presided at the ceremony.

Mr. Boudrias is president of his local Young Farmers' Club and a son of Napoleon Boudrias, a progressive farmer who has passed his knowledge of sound farming practices on to his son.

New Sheep Breeding Centre Organized

A new centre of sheep raising has just been organized in the northern part of the County of Terrebonne. J. A. Parenteau, regional agronomer, and A. Noel, district agronomer, are the two men by whom much of the work of organizing the new centre was done. Members of the newly formed breeders' club come from St. Jovite, St. Faustin and La Conception: there are 80 sheep raisers who together own 514 choice ewes and 35 purebred rams.

Three Rivers Market Gardeners Meet

Mr. J. H. Lavoie, Chief of the Horticultural Service, was the chief speaker at the annual meeting of the Three Rivers-Nicolet section of the Market Gardeners Association of Quebec held in December at Three Rivers. Mr. Lavoie pointed out that the good markets which now existed for truck crops might not be so favourable after the war. Problems are bound to arise which should be foreseen now. There will be more competition after the war and there will be imported produce to contend with. Farmers who will be able to meet this competition are those who can produce quality at a low price. He advocated co-operation which would permit the use of machinery in common, and also co-operation in the matter of selling. He also strongly advocated a closely-knit professional organization of horticulturists capable of bargaining for the group.

Other speakers at the meetings, which were presided over by Messrs. J. E. Roy and J. B. Millette, were Omer Caron, Maurice Talbot, Henry Dubord, Omer Van Nieuwenhove and Henry Jeanneret. The meetings were held in Three Rivers city hall.

Entomologists Meet In Ohio

Dr. George Gauthier represented the Province of Quebec at a conference of Canadian and American entomologists which was held early last month at Columbus, Ohio. For three days some of the foremost scientists of this continent discussed problems of insect control, with particular reference to the needs of wartime. On behalf of the Province of Quebec, Dr. Gauthier reported on the activities of the Plant Protection Division in its efforts to remove obstacles to maximum production of farm crops here.

Many Plastics Have Beginning Down On The Farm

The importance of plastics has been emphasized during this war, not only by architects and interior decorators, but by scientists. Many of these plastics are produced from farm oils. There are hundreds of uses for plastics in the manufacturing of instruments and equipment for the machines of war. These same plastics will also be used for the needs of peace after the war years are past.

The cultivation of soybeans in Canada has been intensified in recent years. Soybeans have a definite place in the waterproofing of fabrics, and soy meal may be used to make plastics. Soybeans, apart from their value as a high protein feed for livestock, also provide edible oil and can be converted into a lubricating oil.

Progress has also been reported in investigations in connection with sunflowers, another plant from which an edible oil may be extracted.

Quebec Poultry Industry Committee Holds Production Conference

by W. A. Maw

An interesting selling motto is: "What you don't see — ask for." The same idea may well be applied to group extension teaching, i.e., discussion of a subject by suggested questions to lead the thought along a certain line to encourage questions from the audience. On December 7th the Quebec Poultry Industry Committee held a full day's program discussing four major seasonal topics in poultry management by the question and answer plan of procedure. The results of the sections, French and English, which were handled separately, were highly successful. Fuller discussion could not have been possible. Enthusiasm in the plan by all present was evident from start to finish.

The meeting was held in the Mount Royal Hotel in Montreal. Approximately 400 people attended the conferences. Chairmen for the two sections were W. A. Maw and P. H. Vezina. The subjects dealt with were: 1. Breeding for egg production; 2. How to obtain maximum hatchability; 3. Hatchery operation problems; 4. Maintenance of egg production.

Leaders were appointed for each subject, in order to introduce the thought basic to the problem and suggest leading questions to start the discussion. A number of speakers supported the leaders in answering questions. The leaders for the subjects listed for the English and French sections respectively were:

1. Breeding: Dr. S. S. Munro, P. E. Bernier
2. Hatchability: N. Nikolaiczuk, B. Chagnon
3. Hatchery Problems: E. Standish, C. E. Benoit
4. Egg Production: W. A. Maw, A. Gratton

A brief resume of the discussion follows:

Breeding for Egg Production

Although the actual basis of the inheritance of egg production is not fully understood, mainly because of its complex nature, in general practice recourse must be made through the use of individual bird and family selection and the progeny test. The progeny test, however, is the most valuable method for expected increase in numerical production of eggs.

Question: What characteristics in production performance are used by the breeder in studying individual bird values?

Answer: 1. **INTENSITY.** This means the rate at which birds lay between pauses or broody periods. It can be measured in several ways such as average number of eggs laid on successive days (clutch size) or per cent eggs laid during any given period not including pauses of four days or more. Intensity or rate of laying is one of the characters contributing to yearly production and considered by many authorities to be inherited independently of persistency or winter pause. Birds must be trapnested to measure this character.

2. **PERSISTENCY.** Refers to the length of time birds continue to lay in the fall of their second year just before the first adult moult. California workers claimed this to be the most strongly inherited of any of the component parts of the yearly record. More recent work at California has indicated that it is not influenced as much by breeding as is maturity, winter pause or rate. A fair measure of this trait can be obtained without trapnesting by noting the time of the moult.

3. **WINTER PAUSE.** This means pauses of more than seven days during the winter months. This characteristic is very often determined by environmental up-sets and when it occurs in pullets particularly during December and January it generally results in a moult of greater or smaller proportions. In untrapnested flocks pausing birds can be identified either by watching closely for head and neck moult or better still by a periodic handling of the birds to determine those in the lay.

4. **BROODINESS.** Most commonly accepted theory of inheritance is that of a complementary effect between two dominant genes. When both of these are present in the one bird it goes broody periodically. When any one is absent the bird does not go broody. While this theory is probably not exactly correct, it does seem to fit most readily what is observed in practice. Especially does it serve to explain the high incidence of broodiness when different strains are crossed. It is the only one production characteristic which has been placed on a plausible gene basis.

5. **EARLY MATURITY.** In the past this characteristic was especially emphasized by investigators as being very important in determining yearly production. It is now realized that most of the relationship between days to maturity and number of eggs produced in a year is due to the position of the moulting season in the calendar year. Those birds starting to lay not later than October usually have 12 full months of production ahead of them before they moult whereas those not starting till November or December have less than 12 months to make their record.

Question: Of what importance is environment to the performance of individual layers?

Answer: 1. **EGG NUMBERS.** When a bird is laying heavily it produces an egg a day through a prolonged period. To do this requires a very efficient use of feed and this means perfect functioning and coordination between the various physiological systems (nervous, blood, digestive, reproductive, etc.). It seems clear therefore that any inherited factor which in any way influences the coordinated functioning of any of these systems will, directly or indirectly, affect production. Furthermore, the presence

or absence of disease pathogens, quality and quantity of feed consumed, environmental temperature and humidity, social organization within the pen and numerous other "environmental factors" not only exert direct effects but interact with the basic hereditary make-up of the individual hen to determine her relative egg production. It is not surprising therefore that the relative position of individuals and families within a flock will vary from month to month and year to year. The greatest problem confronting the breeder is, — what constitutes a reliable index of an individual's hereditary make-up? If this question could be answered, the practical problem of how to breed for egg production would be largely solved.

2. **EGG SIZE.** Egg size is a quantitative trait like egg numbers but research and practical experience proves it to be much less subject to environmental conditions such as those enumerated above. For the most part hens will maintain their same relative position within the flock from year to year and there is a distinct and fairly constant correlation between relatives with respect to egg size. This characteristic is sometimes difficult to attain but it does not present the same practical problem as does egg numbers.

Question: What is the specific difference between individual selection and the progeny test for production improvement?

Answer: 1. **INDIVIDUAL SELECTION** refers to the choices of breeding females on their own laying record and of males on their dam's record.

2. **SISTER SELECTED** means the choice of both male and female breeders on the average egg production of all their sisters both full and half.

3. **PROGENY TEST SELECTION** means the choice for future breeding of those parents whose progeny have been the best layers.

In all these methods it is implied that the poorest individuals or families or parents be discarded along with their offspring.

The three methods are given in order of their efficiency. In characteristics which are governed mostly by inheritance, e.g., feather colour, all three will produce progress, but sister selected will give faster results than individual selection and progeny test selection will be more efficient than sister selected. In characters which are largely controlled by the environment and to a minor degree by heredity, individual selection may make little or no progress but progeny test selection should produce results even though slowly.

When dealing with a complex and unknown characteristic like egg production, the geneticist can only recommend the progeny test, but no guarantee of progress can be made.

How to Obtain Maximum Hatchability

Poultrymen and hatcherymen alike look to better hatchability to increase their revenue and to improve the effi-

ciency of their operations. As the hatchability problem is dependent upon the selection, management and feeding of the breeding stock and the care of the eggs prior to incubation, the results obtained are largely the responsibility of the flock manager.

Within all breeds hatchability decreases as the breeding stock becomes older. A slump in per cent hatchability may be expected following a slump in egg production during the breeding season.

Once the eggs are laid they must be given proper care. Frequent gathering from the nests, rapid cooling to 40 to 45 degrees Fahrenheit, additional humidity in the egg room, all serve to improve hatchability. Holding time should not exceed 7 to 10 days. Eggs for hatching should be carefully selected.

Feeding for high hatchability is the dual responsibility of both the poultryman and the feed manufacturer. Commercial breeder mashers are prepared to supply additional vitamins, A, D and riboflavin, a better quality of protein and certain minerals. The accumulative effect of better nutrition is reflected in higher hatchability. Lastly, the mechanics of incubation also play a definite part in hatchability.

Question: Is hatchability of eggs inherited by the progeny from parent stock? If so, how should a breeder proceed to improve hatchability of eggs?

Answer: Generally speaking, hatchability is inherited by pullets from their mothers. To improve hatchability of eggs in a flock, it is advisable to select families of daughters coming from mothers showing a high per cent hatch of all eggs set. In this way, the factors influencing embryo mortality are eliminated. In order to get such evidence, however, it is necessary to record the chicks hatched from individual hens in matings headed by a single male. Where flock matings only are used, it is then advisable to head such pens by males coming from families showing high hatchability of eggs set.

Question: Is the feeding of a breeder ration an economical practice? What specific nutritional difference exists between the laying and breeder rations?

Answer: Breeder rations, while more expensive to buy, prove their economy in higher hatchability of the eggs set and better livability of the chicks hatched. These specific improvements are gained largely through the addition of increased quantities of vitamins A, D, riboflavin and the mineral manganese. It is the presence of the above nutrients in greater quantities that accounts for the nutritional difference between the breeder and laying mash and therewith the difference in cost.

Question: Is the use of fortified fish oil as a feed supplement to laying and breeding stock recommended? How can it be given to the birds? Are all fortified oils of the same value to poultry?

Answer: Usually prepared laying mashers contain sufficient fish oil to supply enough vitamin A and D to ensure

good egg production, while breeder mashers are likewise designed to meet the requirements for good hatchability and chick livability. If, however, added fish oil gives improved results, it may be assumed that the mash fed was deficient. Under the latter conditions extra fish oil feeding is justified. This can be done by mixing the oil in a small quantity of the mash being fed. When moistened, the mixture may be offered as a mid-day appetizer. Some operators prefer to mix the additional oil in the scratch feed.

Fortified oils should carry some designation of their value for poultry feeding. Four grades of potency are now offered on the market and their feeding value is proportional to their guaranteed vitamin unitage.

Hatchery Operation Problems

The problems of the hatchery operator are many. Success is largely dependent upon the quality and the management of the breeding stock in the numerous flocks necessary for the egg supply. The inspection and selection of the stock, followed by blood testing and, later, mating by acceptable male stock, are of major importance. Such work commands early attention to avoid unnecessary difficulties arising due to lateness of the season.

The question of full-time work for the hatchery operator is important. Where the season of chick sales is limited, other types of work should be available to fill out the year's time. The question arises as to whether or not field work, or additional sales work, cannot be arranged.

Question: How much time is necessary for proper conditioning of the breeding flock before hatching eggs are best?

Answer: After the flock has been selected for general physical fitness and has been blood tested, at least 4 to 5 weeks should be allowed for full effects of the breeder ration being fed. As regards fertility, at least 10 to 14 days should be allowed to ensure all females being bred before any eggs are held for incubation. The pens should be mated when the breeder mash is introduced, as the males as well as the females must be fed complete rations.

Question: When should breeding males be purchased?

Answer: The age at which male stock should be purchased is an open question, since some operators are in a better position to handle such stock than others. When purchasing mature males, only those males needed are purchased, but higher prices must be paid for them. Partially grown males may be had at reasonable prices and grown to advantage. The day-old cockerel, however, is the least expensive method of purchase, but arrangements must be made to handle the birds during growth.

Maintaining Egg Production

Successful normal production through the fall and winter season is dependent upon numerous factors: initial selection of the stock and care in housing and feeding to ensure the maintenance of health and general body condition. Avoid any over-stimulus of production, since any break in production due to temperature change or nutri-

tional requirement may be followed by a winter pause necessitating the reconditioning of individuals before egg production may be resumed. Close observation, therefore, is necessary, as general body condition, balance in feed intake, rate of production, and general housing conditions, such as temperature, ventilation, dryness, depth of litter and freedom from offensive odours, are all factors influencing the persistency in egg production.

Question: What caused the drop in egg production and how can it be corrected?

An owner of 550 Barred Plymouth Rock pullets, which commenced to lay August 15th, before being six months of age, and which are fed a standard laying ration, has experienced a sudden drop in egg production during early December. The birds' combs are pale in colour; a partial neck moult has started. Extra milk has been fed since the first of November.

Answer: At the outset, it is apparent that the pullets were being forced by feeding for high egg production. For some unknown reason, whether it was a sudden change in temperature or a disturbance of some kind, the birds were thrown out of production. The pale combs and neck moult indicate complete stoppage of production and a reconditioning being necessary before eggs can be expected again. When a break in production is apparent, the birds should receive the best of care — clean, dry, comfortable housing conditions; encouragement to consume extra mash feed by using moist mash; a tonic might also be used. Where the birds were forced for maximum production prior to the break, there is little left to do but to recondition them by careful feeding, since time will be lost in growing new neck feathers. The time for action is just as soon as the break in production occurs. Force the birds to consume equal parts of mash and grain.

Question: Is the nature or amount of pasture forage provided during the growing season related to the occurrence of feather picking by pullets after being housed in the fall?

Answer: It appears certain that the quality and amount of pasture forage available to growing stock is important in avoiding feather picking by mature pullets. Certain mineral elements in the soil may be responsible for forage on a certain field when fed showing no after effects of picking by the birds, whereas the same type of forage grown on another soil will produce birds having a craving for picking and eating feathers.

After the pullets are housed some form of forage should be provided, either as dry green hay or clover, or alfalfa, or moist alfalfa meal. The hay can be fed in a rack or on the floor, whereas the meal can be fed on the dry mash in the hopper. Feed only that amount which will be eaten during the morning.

Many other questions were discussed during the day, giving those present an excellent opportunity to develop many ideas, as well as get the reaction of others to their ideas and opinions.

When Plowing Was An Art

In those leisurely days—the '80's in Ontario—fall plowing was an art, practised by every farmer who took any pride in the appearance of his fields, or valued the criticism of his neighbors if they should see any slovenly work. The care one may see still taken at the plowing matches was the rule in former days, not for professionals alone, but for most plowmen. To measure each land so that it would be an even width at the finish; to strike out straight and split the opening so that everything would be cut; to turn a furrow even in width and depth; time was of less consequence than thoroughness and a smooth surface and a straight furrow.

Plowing as an art has fallen on evil days. It is not to the point to say that the job is done in ever so much less time, and perhaps just as effectively. That would not satisfy the old-fashioned plowman. He would say that in most instances the work looks slovenly when finished. The modern plowman replies with much reason that today time is the essence of the contract, that speed is more important than appearance, for winter rains and snow soon break down or cover up the best-looking piece of plowing. Yet, as Othello says: "The pity of it, Iago, the pity of it." That the necessity for speed should break down a man's pride in his work. And that applies to more than the art of plowing.

—Ontario Milk Producer.

"Meatless Days"

She went to the butcher's
For spare ribs and suet,
But found that some others
Had beaten her tuet.
She said she would settle
For sausage and liver,
The butcher insisted
He had nothing to giver;
She pleaded for pork chops . . .
For meatballs . . . For mutton.
The butcher said: "Lady,
I just ain't got nutton"!

—B. Elliott.

Clean Machines Give Clean Milk

One of the chief causes of poor quality cream is that the milk separator has not been thoroughly washed and scalded after each run. If the separator is left unwashed, large numbers of bacteria grow in the residue in the bowl and other parts. These bacteria are picked up by the cream at the next separating. In the event of the separator not having been thoroughly cleaned, the keeping quality of the cream may be improved by the following treatment:—

With the bowl turning at full speed, pour a pailful of hydrochlorate solution into the supply tank. Brush the inside of the tank with this solution, then allow it to run through the machine. This will rinse out and destroy many bacteria and prevent them contaminating the cream when the milk is run through the machine.

Milking machines with their yards of

rubber hose require a different type of treatment. After the remaining milk has been flushed out by drawing cold or luke-warm water through under vacuum, the tubes are filled with a solution which prevents bacteria from growing. A number of solutions have been tried but the one giving best results in being both cheap and effective consists of one-half of one per cent (0.5 per cent) of common lye. The teat-cup clusters and long milk tubes are hung on a solution rack and filled with fresh solution after each milking. The lye solution is drained out before the next milking.

Unless manure is infested with weeds, it is usually desirable to draw it fresh from the stable to the field. Where snow does not prevent its use, the manure spreader is the most satisfactory implement for drawing and spreading manure.

Science and the Farmer

In the relationship between the Canadian farmer and the Canadian scientist, there has been a remarkable change since the beginning of the 20th century. The scientist has taken his methods to the fields; the farmer has brought his problems to the laboratory. To apply the laws of science to the everyday practices of agriculture is one of the functions of the research workers of the Dominion Department of Agriculture, mainly through its Science Service, and the Experimental Farms, in addition to the agricultural scientists at the several universities and agricultural colleges, and to some extent by industry.

In the field of agricultural research, Canada is second to none in the fine work done by her trained specialists. In agriculture, particularly with reference to the all-important production of food, research work, as pointed out by Dr. E. S. Archibald, may be conveniently divided into three groups; (1), research in production; (2), research in marketing, and (3), research in absorbing special crops, surpluses and wastes.

Canada's plant breeders have opened

up many millions of acres through the development of earlier maturing and more suitable types of crops in cereals, forages, and horticulture, and to these accomplishments have been added the protection of these acres through the creation of disease and insect resisting varieties and types of crops. Because of the development of new types and varieties of tobacco and cultural methods adaptable to Canadian conditions, large new areas have been opened up, and other crops, such as fibre flax, have been introduced, improved, and adapted to various parts of Canada. One of the most recent accomplishments, and one probably of the greatest value in wartime, is the study of Vitamin B1 values of wheats.

Research workers dealing with animal and poultry nutrition have also shown the way toward greater usefulness of Canadian foodstuffs. Research in marketing has also contributed greatly to Canada's agriculture and applied industry, and has benefited the consumers of Canadian foodstuffs both at home and abroad.

STRIPPINGS

by Gordon W. Geddes

The Farm Forums certainly have one accomplishment to their credit. We can now forecast the weather for one night of the week with reasonable accuracy for we can be fairly sure that every Monday night will be stormy. Well, if anything or anyone thinks them of sufficient importance to deliberately try to freeze us out, that is another good reason for keeping on. And we need some accomplishments in regard to farmers' rights to sell maple produce direct to consumers. Otherwise a lot of would-be consumers won't be consuming because the sap will stay right in the trees.

A lot of would-be consumers won't be eating Canadian bacon either unless there is definite action on the hog front. Mr. Gardiner claims we can buy feed for hogs at the same price as last year yet he claims the western farmer is apt to go out of hogs because grain prices are higher. How does that fit together? Anyway, we are paying more for feed whether Mr. Gardiner knows it or not. If we should be getting it for the same price as last year then something should be done about it. If not, then something should be done about Mr. Gardiner. In the meantime the sows are off to market on a one-way ticket. And we can market next year's hog crop pretty fast that way.

And a sudden increase now in the bacon price will make another flood at the packing plants next fall. Sows bred in response to an increase wouldn't mean marketable pigs until next fall. The announcement should have come some months ago but the sooner it is made, the sooner there will be more bacon. The comparatively stable hog price throughout the year is bound to mean a big fall run of hogs. Some of us were getting sufficiently interested in the higher price paid in July and August to take the extra trouble to have hogs ready then. With that incentive removed, few of us will take the extra risk and bother of having sows farrow in cold weather. And any premium on the early hogs should not be gained by cutting a little of the later ones. It should be a definite premium over a fair

fall price for the extra cost of raising early ones.

We notice that there is a poor response to the call for men from the farms to work in the woods during the "slack time" on the farm. Goodness knows, if there is a bit of a slack time before next year's rush to handle the crops with half the required help, we need to take it. Unfortunately for many of us there just doesn't seem to be any slack time. We can't even find the time to do needed work in our own woodlots. When we hear of some factories cutting the working hours of their men, it seems as if that might be a better place to look for slack-time workers. Perhaps, though, they wouldn't work as cheap as the farmers. "Farmers think too little of themselves," as Louis Bromfield puts it.

And the cows think too little of poor hay to produce milk on it. Canadian production of milk and cheese was down considerably during November as compared to last year. Our own cows got good clover hay during the first part of the stable period. They didn't seem to realize it was winter at all while that lasted, even on the reduced protein level of the grain feed. The next mow happened to be the very last cut during the wet weather and down went the milk-flow. Anyway it stayed up long enough to show what could be done if the weather was good enough and we started haying early enough with help enough to get done quickly. Enough said. When the milk dropped we had to establish priority rights and a rationing system on available skim milk. There wasn't enough to go around, which wouldn't be so bad if there were

plenty of substitutes available. But the substitutes are even scarcer than the milk. At least there ought to be a fresh cow soon so that there would be a little extra skim milk for a Christmas treat.

We thought for a while that we should have to make some sort of treat out of one of our young pigs. It had a bad rupture on the belly with a large protrusion. However we separated it from the rest and it is now quite normal. Maybe it will get to Britain yet. If it does the extra steps to feed it by itself will be well-spent.

Butter, Cheese Production

For the first eleven months of 1943 (January to November inclusive) the amount of creamery butter produced in Canada was 299,351,843 lb. or an increase of 11 per cent on the production in the corresponding months of 1942. During the same period of 1943, the production of cheese was 155,810,177 lb., a decrease of 21.7 per cent on the months of 1942, and ice cream production was 15,857,706 gallons, an increase of 8.4 per cent on the corresponding eleven months of 1942.

Speed Victory

by

Saving



TO STOP COUGHS
**MATHIEU'S
SYRUP**

IS WORTH ITS WEIGHT IN GOLD
ON SALE EVERYWHERE



CO-OPERATION AND MARKETING

A page of interest to members of farmers' co-operatives

Co-operatives—a Technique of Reconstruction

(The following is an extract from the brief presented by the Canadian Federation of Agriculture to the Committee on Reconstruction.)

Even though today wartime controls bring Government action directly into every phase of the farmer's business, we still have faith in a policy of self-help through the various phases of the co-operative movement. We believe this movement offers vast possibilities for fashioning the order of the future. All plans for a better world order are based on co-operation between the democratic nations. In our opinion one of the greatest hopes for democracy lies in adopting the co-operative way of life and in applying the co-operative formula of economics and community living all along the line. Co-operative organization and technique should go hand in hand with planning in agriculture and particularly on the producer and marketing end, while consumer co-operation offers yet unrealized possibilities in the distribution of farm supplies and household goods. The Credit Union movement for handling credit co-operatively is growing rapidly in Canada and is worthy of more attention than it receives. Apart from the advantages of social betterment and revitalizing democracy, the

co-operative movement has an indisputable record for economic efficiency. It offers a solution for many of the worst evils and failings of competitive distribution. Canada would be well advised to go all-out in encouraging people's co-operatives as a positive feature of reconstruction policy.

A Federal Co-operative Act, to clearly define the principles, the rights and the place of co-operatives in our national economy, is needed at once. The right of co-operatives to distribute savings to the members who have earned them has been challenged, and this strikes directly at the foundation of the co-operative movement. This is very important because co-operation will assume a larger role than ever before in the post-war world. If it does not, then we may look in vain for a new world order. That the great majority of world nations support this view is indicated by the resolution endorsing the co-operative movement passed at the United Nations Conference at Hot Springs, Va.

Co-operative Principles, Practices, Essentials

by R. H. Ellsworth

The principles differentiate co-operation from private profit enterprise. The practices include techniques which nearly 100 years of experience have proved useful; and

the essentials listed are some of the concepts the acceptance of which is necessary to make co-operation function as an economic institution.

PRINCIPLES

- Open Voluntary Membership regardless of sex, race, creed, or political affiliation, and includes the right of voluntary withdrawal.
- Democratic Control, usually expressed in the words, "one member one vote—no more."
- Limited Returns to Capital, on the theory that capital is "hired".
- Patronage Benefits, whereby savings resulting from joint effort are allocated according to the participation of each member.
- Neutrality in matters extraneous to a co-operative economy.

PRACTICES

- Selling for cash at market prices.
- Employment of trained personnel at fair wages, and under good working conditions.

- Dissemination of pertinent and accurate information as to the duties and rights of co-operators, and the benefits flowing from their working together.
- Providing meetings for discussion, study and/or recreation.
- Providing for the continuous expansion of the co-operative form of enterprise.

ESSENTIALS

- Honesty in business transactions.
- A consciousness of group unity.
- A knowledge of sound business methods and co-operative techniques.
- Adequate capital provided on an equitable basis (Revolving door plan).
- Adequate volume of business sufficient to ensure economical operation.
- Efficient and capable management.
- Accurate bookkeeping records and regular audits.

ADOPT AND FOLLOW THESE PRINCIPLES, PRACTICES AND ESSENTIALS TO
SUCCESSFUL CO-OPERATIVE ACHIEVEMENTS.

—Co-op News

Quebec Co-ops Break Records

A remarkable growth in the number and strength of Quebec co-operatives and credit unions over the last thirteen years was reported to the fifth annual congress of the co-operative movement recently held in Quebec City.

There are now 500 local agricultural co-operatives as compared with 75 in 1930. The number of peoples banks totals 737 as against 125 in 1930. Mutual fire protection groups have increased from 175 in 1930 to 305, and today there are 16 fisheries co-operatives where there were none thirteen years ago.

Membership and Assets

The agricultural co-operatives have 36,761 members and assets of more than eight million dollars. Last year business amounted to \$28,927,978. A profit of two and a half million dollars has accrued to members since 1931.

Five-sixths of the parish banks are in rural areas. They have more than \$43,600,000 in assets. They number 204,575 subscribers and 37,467 borrowers. An interesting comparison was made between Montreal and Quebec City with assets of \$4,800,000 and 16,817 members. In Montreal

there are 33 with assets of \$4,400,000 and 14,216 members. At Quebec there is a special parish bank for long term credit to aid in the construction of homes.

The fisheries co-operatives of Gaspé last year did 40% of the fisheries business in that area and are gaining steadily. Their business last year amounted to \$600,000.

Co-ops Undergird Democracy

"Unless goods move across frontiers freely, armies eventually will," said Howard A. Cowden, president of the Consumers Co-operative Association, North Kansas City, in a recent broadcast.

"Getting goods to the consumers, therefore, will be the number one problem facing the post-war world. If we succeed, we may win a just and lasting peace. If we fail, peace will again be merely an interlude between wars.

"Co-operatives are the way to get goods to the people, the way to undergird democracy, the way to win the peace. Getting goods to the people can be done best by consumers themselves through co-operatives."

Market Comments

Prices present a remarkable degree of stability at the end of the year whether compared with the previous month or with a year ago. Availability of supplies is now the major factor.

The adverse season of 1943 is reflected in prices of many field crops. The grain surplus that has prevailed throughout the war years is dwindling. This has recently brought prices of field products closer in line with prices of animals and animal products. This is an advantage to those producing grain for sale but is quite the opposite to those that purchase feed for live stock.

The decrease in grain surplus is due to three reasons including the poor crop of 1943, the large numbers of live stock on hand and the export of feed grain to the United States. From August first to December 23rd, 1943 exports of grain to the United States amounted to 90 million bushels of wheat, 23 million of oats, and 16 million of barley in round numbers.

Values of Field Crops 1943

The total farm value of all field crops is estimated at \$1,102,130,000 in round numbers \$102,000,000 less than in 1942. Declines in values are chiefly in the three provinces of Saskatchewan, Ontario and Alberta. Quebec values are only \$2,000,000 below that of the previous year. All other provinces report increases the most notable being a marked increase in New Brunswick due largely to the potato crop.

All crops except hay record a higher unit value. Quebec province prices record an increase of 13 cents per bushel

of oats and 8 cents in barley over last year. Hay is \$2.00 per ton lower.

Quebec province produced about one million more tons of hay in 1943 than the year before, a gain of almost one-fifth. Production of oats, barley and mixed grains was down about 15,000,000 bushels, a drop of 23 per cent.

Trend of Prices

	Dec. 1942	Nov. 1943	Dec. 1943
	\$	\$	\$
LIVE STOCK:			
Steers, good, per cwt.....	11.40	11.77	11.82
Cows, good, per cwt.....	8.70	8.57	8.42
Cows, common, per cwt.....	7.15	6.42	6.50
Canners and Cutters, per cwt.....	6.15	4.77	5.33
Veal, good and choice, per cwt.....	15.46	15.88	15.25
Veal, common, per cwt.....	14.03	13.19	13.58
Lambs, good, per cwt.....	13.45	11.72	12.12
Lambs, common, per cwt.....	11.45	9.72	10.12
Bacon hogs, B.1, dressed, per cwt.....	16.68	16.88	17.15
ANIMAL PRODUCTS:			
Butter, per lb.....	0.35	0.35	0.35
Cheese, per lb.....	0.20	0.21	0.21
Eggs, Grade A large, per doz.	0.47	0.50½	0.48
Chickens, live, 5 lb. plus, per lb.....	0.23	0.27	0.28
Chickens, dressed, milk fed, A per lb.....	0.31½	0.34	0.35
FRUITS AND VEGETABLES:			
Apples, Quebec McIntosh, extra fancy, per box.....	2.60-3.00	3.25-3.50	
B.C. McIntosh, extra fancy, per box.....			3.30-3.50
Potatoes, Quebec No. 1, per 75 lb. bag.....	1.25-1.55	1.60	1.65
FEEDS:			
Bran, per ton.....	29.00	29.00	29.00



THE WOMEN'S INSTITUTES SECTION

*Devoted to the activities of the Quebec Institutes
and to matters of interest to them*

JAM FOR BRITAIN

by Rosamond Stevenson

(Mrs. Allan Stevenson, National Director, Nutrition Services, Canadian Red Cross Society).

When war was declared more than four years ago Canada's orchards were producing abundant crops, and the women of this country turned their thoughts to Britain, where much of the food has to be imported. In September of 1939 one group of rural women, inspired by Mrs. T. B. Barrett of Port Dover, packed and sent 11,500 pounds of jam overseas. The following spring the Women's Institutes requested the Canadian Red Cross Society to co-operate in this undertaking, and so the Jam-for-Britain project was started.

The Canadian Red Cross agreed to supply tins, labels, cases and transportation for the Women's Institutes or other groups who would supply the fruit and sugar and make the jam. Instructions and recipes were sent out by the Women's Institutes to all their Branches and the Red Cross also sent out instructions to its Branches. It was decided that this jam should be used for patients in military hospitals overseas, and for bombed-out victims, particularly little children in war nurseries, many of whom have lost their homes and parents.

During the summer of 1940 more than 138,000 pounds of jam were made and contributed for overseas use. In 1942 the women of Canada increased this to the magnificent total of 527,000 pounds. Think of it! More than half a million pounds of jam!

Hundreds of letters have come to the women of Canada, to the Red Cross and to Women's Institutes thanking them for their gift. Jam in these cases is more than just a food supplying energy. It gives to people who are suffering great hardships the feeling that we Canadians care about them. To the lads in the hospitals it is a bit of home.

Jam is scarce in Britain. One pound of preserves each month is the ration. So it is not hard to imagine the joy on the faces of the tiny tots in the nurseries when those four-pound tins arrive from Canada with the maple leaves and Red Cross on the labels, telling them that this is a gift from their friends across the seas.

Queen Mary is particularly interested in the Victoria Home for Invalid Children, and in the spring a letter was received from her expressing her appreciation of the jam sent to that Home.

Each succeeding year rural women have become busier, but those who now have found it impossible to give their time have contributed to a fund which has been used to

purchase commercial jam, or to buy sugar for districts where they have fruit. The same has been done by Women's Institutes in areas where there are no fruits grown. This last year nature has failed us and there has been a great scarcity of fruit. This may result in less jam being sent to Britain in 1943. However, Major-General Price, the Red Cross Commissioner overseas, has told us what a welcome gift this is to the people in the British Isles and how much it will mean to our young men who are in the military hospitals, — a touch of home when they are far away and ill!

We know Canadian women will not cease their efforts in spite of the many difficulties. We hope that every Institute Branch will lend its support in 1944 in supplying jam where it is badly needed. Further information about the Project will be given during the winter.

HOME ECONOMICS

by M. L. Kezar

Mid-winter is here with its cold winds, ice and snow—a very good time to spend indoors and do the household sewing.

Before laying in a new supply or making up new articles, it is always well to take stock, go over the old, repair and make over. It is surprising what can be done with partly worn things to freshen up and make them last longer. Even the usually considered wornouts can be made use of by giving thought and work to them.

The better parts of worn linen towels make good small towels and wash cloths for babies and young children, as they are soft and absorb moisture readily, while the better parts of bath towels make good wash cloths for general use. A worn sheet may be made to give longer service if the outside edges are sewed together, the sheet cut through the centre and finished with a narrow hem. If a worn part has to be taken out of the centre the sheet may still be large enough for a smaller bed.

When table cloths can no longer be darned or mended the good parts may be made into tray cloths and serviettes, while the thinner parts may be quilted for dish-cloths. If tired of certain draperies or curtains a change may be achieved by tinting or dyeing. There are usually parts which can be utilized for smaller windows, or used as dusters. Waste may go into the salvage.

It is usually found necessary to make some new things in order to keep up the stock in hand. When making new sheets have the hems at both ends the same width, then there will be no top and bottom, and they will wear more evenly. The same is true of curtains, and these may be reversed in hanging if it does not interfere with the design of the material.

Now is the time to economize as never before. Old things may be made to last longer and new ones planned so as to give the most service possible, in order that the homes may do their part of the requirements which are expected from every Canadian family.

Q.W.I. NOTES

Argenteuil County. Brownsburg Branch had as guest speaker Mr. J. S. Giles, who spoke on Canadian Citizenship. Frontier held an education meeting with Mr. H. Bradford and Mr. G. Deacon as speakers. Jerusalem-Bethany donated \$5 to the Salvation Army and had a paper on food values. Lachute is purchasing library books. Inspector of High Schools of Quebec, Mr. Ployart presented films showing special features of the High Schools of the Province. Mrs. L. Armstrong gave a paper on contagious diseases. Mille Isles heard an address by Mrs. Byers, member of the Protestant Committee of the Council of Education. A paper on the duties of the Treasurer was read. Morin Heights had a paper by Mr. Scott, Principal of the High School. This Branch is sponsoring a Girl Guide Unit. The School First Aid was refilled and articles on child welfare read. An auction of home-made articles netted \$9.15 for the funds.

Pioneer branch donated \$2 to the Salvation Army, and held a successful Amateur Programme. Seven dollars were donated to the Children's Memorial Hospital. An address was given by Rev. H. Thorpe on the Alaska Highway. Upper Lachute had an address on Nutrition by Nurse Harrison. The semi-annual meeting of the County had as speakers Mrs. Gordon Wyness, R.N., who spoke on National Health, and Mrs. W. Y. King, a missionary recently returned from China. Lakefield catered for the local farmers' supper.

Compton County. Scotstown Branch collected \$35 for the local cemetery and purchased a stretcher for community use. The Branch was instrumental in having the Town Reservoir cleaned. School prizes were donated and the School Fair assisted in securing a radio and phonograph for the School. Forty folding chairs were secured for Institute use and to rent. An adult Study Group was sponsored. The W. I. Hospital bed was used when needed. This Branch has a member on the School Board. Money was donated to the Wales Home, and jam, jellies and vegetables to Sherbrooke Hospital.

Huntingdon Branch. A social evening in this Branch netted over \$61, which was donated to Huntingdon County Hospital as part of a pledge of \$100. Compulsory educa-

tion was discussed in the meeting. Papers on "Giving" and "Race Prejudice" were given, and a book review of "Precious Jeopardy" was given by Mrs. Braithwaite, the meeting concluding with a mystery sale.

Shefford and Mississquoi Counties. South Roxton Branch made plans for Christmas doings and sent for a McGill Travelling Library. South Granby collected \$7.50 for the W. I. Self-Denial Fund. Cowansville Branch gave 8 prizes in the High School and a scholarship in Grades 8 and 9. A refreshment booth at a sale replenished the treasury. Dunham sent knitted afghans to the day nursery in Montreal. St. Armand had a paper on the life of Prime Minister Churchill. Letters of thanks for seeds sent to Scotland were read. Stanbridge East gave prizes in local schools and a scholarship was given for total marks in Grades 6 to 10. Education for citizenship was the topic for discussion at the meeting.

This County mourns the loss of Mrs. N. H. Robinson, one of its faithful officers and members, also a County President.

Chateauguay County. Aubrey-Riverfield sent two quilts with toys to Verdun School. Howick had a Christmas programme, and also Ormstown. Dundee Branch was represented at a War Reconstruction meeting held there. A speaker, Rev. Mr. Knowles, spoke in the County on national and International Relations.

Pontiac County. Rev. W. H. Hunter addressed Fort Coulonge Branch on The Good Canadian. The Ella Bryson scholarship was presented to Miss Elizabeth Bund. Bristol Busy Bees discussed first aid and heard a talk by Mrs. Johnston, Supt. of Shawville Hospital. A canvass was arranged of fruit and vegetables for the Hospital. Ownslow Corners gave kitchen utensils and money to a resident in need. Elmside had a talk on the Seed Industry in Canada, and Wyman had practical hints on vitamins. Shawville Branch arranged to sponsor a film-showing by the National Film Board each month.

Richmond County's report will appear in the War Services section in February.

Sherbrooke County catered for the Annual ploughing match of the local Agricultural Society, greatly to the advantage of the Branch treasury. Cherry River prepared for Christmas doings for the children and held a sale of articles suitable for presents. Lennoxville held a successful food sale and tea, as well as a "give and buy" sale. Ten dollars were voted for the Self-Denial Fund. Sick members were remembered with baskets and other gifts at Christmas. A true Christmas story was read by the President, Mrs. A. E. Abercrombie. Orford held similar sales, and sent a cash contribution to the Wales Home.

Stanstead County. Ayer's Cliff discussed education and planned hot school lunches. Beebe held a guessing contest on the Provinces of the Dominion. Dixville had a mixed programme with short items contributed by each member, and Hatley sent flowers and a card shower to the sick.

North Hatley voted \$5 for Health prizes, and \$25 for school work. \$8 was voted to the National Committee on Mental Hygiene. The refugee problem was discussed in Tomifobia Branch. Way's Mills collected \$3.25 for the Self-Denial Fund. A Travelling Library was ordered and a paper on Iceland heard.

Quebec County. Valcartier Branch held a concert which realized \$56. Thirty dollars were given to the local skating rink. Gifts were sent to two new babies, flowers to a sick member and a Christmas treat of apples supplied for all children in the community.

CANADA IS OURS

by Grace A. Kuhring

In 1933 the German people were discontented. They were saying, as we often hear people say here in Canada, "We need a change." So for a change they voted for Adolf Hitler and State Socialism. It promised so much and they felt that at last they had found a perfect form of government. They soon began to have misgivings and they have since learned, to their sorrow, that their inconsiderate votes have brought them to a state of slavery. That, between their Nazi Leaders with their Storm Troopers and the Gestapo, they are caught in a trap from which there is no escape, except by death.

In the Democracies we have built our way of life upon a firm foundation . . . the family. The whole point about the family in our democratic countries has been its independent status. Our society has been built up on the belief that individuals—men and women and their families—are more important than the State and that the State exists to serve them.

The Nazi Party (which is short for National Socialist Party) in Germany avers that everybody exists through and for the State.

In Nazi Germany children are taken from their homes at the age of four, to join the official State Youth Movements. Children there no longer learn at their mother's knee. They learn from the State and they learn among other things to despise and even to betray their parents. Such a system as Naziism can only continue if its subjects know nothing of liberty and freedom, of love and compassion, of fair play and decency, so Hitler started at once to train the children of Germany in his way.

It is interesting to compare the way in which this war is being financed in Canada with the method used in Nazi Germany. In Canada we are asked to buy interest-bearing war bonds if we can possibly plan our budget so that we may do so. In Germany a government survey is made and each person is notified that so much per cent of his entire assets have been assigned to "the Cause". No bonds, no interest, no promise that one cent will ever be returned. . . and in fact no intention to return one cent.

It is difficult for Canadians, in this great land of Freedom and Liberty, to realize what Nazi oppression means. To people born and reared in a Democracy, oppression is so fantastic and unreal that we are unable to grasp its full meaning. Only after one hears at first hand the sad and awful stories of those who have experienced that oppression can he begin to understand something about it.

A refugee recently arrived here, — who had escaped from a prison camp in an occupied country, — was in that camp because he had been sentenced to two years at hard labour for failing to give up his seat in a street car to a German officer. That refugee was born and had always lived where Democracy was the way of life before his country was occupied by the Nazis. Soon after his arrival here he joined the armed service of his nationals hoping to get overseas at once to fight beside the allies to help to free his homeland and other lands which had been occupied. Unfortunately his physical condition must be built up before he may realize his ambition, for near starvation has been the lot of all the people in his country for several years.

Canadians sometimes fail to realize that paid Nazi agents are here in our midst. Every day they are busy spreading their propaganda and false rumours. It is bad enough to know that Nazi agents are working in this way but what is more appalling is the fact that unthinking Canadians are freely spreading Hitler's propaganda and false rumours. These unpaid "Canadian agents" are one of Hitler's most effective means of impeding our war effort.

Nazi agents in Canada have been busy trying to incite race hatred. We must be on our guard against race prejudice. Jews, Chinese, Russians, Negroes, peoples of many races and creeds are fighting by our sides and share our love of freedom. The Jewish people particularly, through the Nazi policy of anti-Semitism, have suffered untold agonies. Not only oppression but murder has been the lot of most Jews who were not able to escape in time to England, Sweden, Denmark, Lisbon or some other haven. That this Nazi attempt to launch anti-Semitism here in Canada has been to a certain extent successful is shown by the arguments which one hears on many sides against allowing Jewish refugees to come to Canada for asylum for the duration of the war.

A petition has been circulated by the National Refugee Committee, asking the Canadian Government to offer sanctuary to refugees from political or religious persecution without regard to race, creed or financial condition.

Many have already signed this petition. In doing so they signify their willingness to save human lives and have shown their support to our Government in its humanitarian and Christian attitude toward these unfortunate and desperate people.

It is with deep satisfaction that Canadians learn that our Government has agreed to admit a limited number of these refugees, now in Lisbon.

For the benefit of those who have heard the Nazi propaganda and have not heard the facts it might be well to state that these refugees have not been assured any right to take up permanent residence here and no changes have been made in the existing strict immigration regulations. About 400 (not one hundred thousand) will probably come. Transportation is NOT furnished by the Canadian Government and only those may be admitted who pass the usual medical examination and who are sponsored, received and provided for by relatives, an individual or an organization.

We are giving our sons and daughters, our husbands and sweethearts, our time and our money to fight Naziism and all that it stands for in Germany. Let us guard carefully to see that we have not made these sacrifices in vain and that we keep our Democratic way of life in Canada.

SUGGESTIONS FOR '44

by Vivian Smith

Congratulations are due the members of the Quebec Women's Institute for the splendid amount of war work they have accomplished during the year 1943. They are especially to be congratulated on the filling of 500 Ditty Bags. We can be sure that the boys who received them will be very grateful.

Blood donors in the Gatineau Co. are carrying on a wonderful work. The importance of this work cannot be too greatly stressed. In the New Year the need of blood donors will be greater than ever before. It is to be hoped that all who can will answer the call. This is one way of helping the wounded and sick. It would be encouraging if more clinics could be formed in the province of Quebec. Much more could be said about the work accomplished during the past year, but at this time it is more fitting to look forward and plan the work that has to be done.

A few Suggestions for the New Year are:—

- (1) Buy more War Savings Stamps. They are a good investment as well as promoting the Victory.
- (2) Plan knitting and sewing groups for the winter months. In rural districts much of this work is done during the stormy winter months. Make the work more interesting by planning quilting bees, etc.
- (3) Give more support to the Self-Denial Fund. Plan to make it a greater success next year by giving more.
- (4) Be more prompt in sending in reports so that the credit which is rightfully yours will be given you.
- (5) Urge members to help with the Red Cross drives. Their need is great.
- (6) Collect salvage regularly and make a note of this in the quarterly reports.
- (7) Make plans to help the many wounded who will return during the months to follow.

FROM WOMEN OF GREECE TO WORLD COUNTRY-WOMEN

A message from the National organization of Greek women to Free Women of the Whole World is a magnificent example of the triumph of spirit over flesh. It tells in burning words the determination of Greek women, in the midst of terrible suffering, never to forfeit the freedom of their own souls. The text of the appeal is as follows:

"We ask you to give us a great promise. Promise that tomorrow when the hour of Victory shall sound, all of us, united, shall demand, nay, shall insist upon the creation of a New World, free from war and destruction, a world based upon the freedom of the individual, on social and universal justice."

The reply of the Associated Country Women of the World, of which organization the Women's Institutes form a unit, was given in these words:

"We the Associated Country Women of the World, have heard the message of the National organization of Greek Women to Free Women of the Whole World with deep grief for your sufferings and inexpressible admiration for your courage. We give you our solemn promise to continue to work for a world free from destruction and based upon universal justice. As women to women our hearts go out to you; as workers for international friendship and understanding we pray for the hour when this hideous war shall be over and the time for help and healing will begin."

Education in Uniform

"Education is not a matter of hours of instruction, but of moments of learning . . . a boy who is ready to be taught can receive much in a small time, while a boy who is not prepared to learn can be obdurate and impenetrable for years. Teaching is not altogether a question of a number of hours lectured, but of rare and unforgettable moments of communication" . . . "Unless the generation of the young, the generation which will fight this war and win it, is prepared to carry on beyond the winning to the victory, no victory will be gained."

—Archibald MacLeish, Librarian of Congress.

The Price of Freedom

It is my belief that every freedom, every right, every privilege has its price, its corresponding duty without which it cannot be enjoyed. The four duties of the people's revolution, as I see them today, are these:

1. The duty to produce to the limit.
2. The duty to transport as rapidly as possible to the field of battle.
3. The duty to fight with all that is in us.
4. The duty to build a peace—just, charitable and enduring.

The fourth duty is that which inspires the other three.

—Henry A. Wallace.

Parents and Children

by Mary Avison

Let Them Grow Up

Many years of study and discussion with groups of parents in both the East and the West have underlined for me the difficulty that parents have in accepting the fact that children grow up.

Children develop and change from day to day but we continue to treat them, as babies. We protect them, and serve them, and do for them, when they want to "do it myself". We pick up after them, mend for them, push them off on time, long after they should be taking responsibility themselves for such things as punctuality, lost articles and holes in their stockings. High School boys and girls become men and women but we, their parents, still think of them as children and are blind in practice to their need for independence until war or marriage forces the realisation upon us.

One kindergarten child is known by his playmates as "the boy who comes to school alone on the street car". This he does quite capably and safely. There is, in his cumbersome nickname, a suggestion of the longing that the others feel to be allowed such opportunities to grow. Self-reliance is a very satisfying experience to young or old.

"The *independence* that young children can and will show under proper guidance is often a source of amazement to grown ups; . . . pre-school children can be more independent than most of us give them credit for. They do not need to be picked up or held by the hand as often as we would like to do it but they do need to have freedom to stand on their own in an environment planned for them by adults who are on hand when help is needed", says Martha May Reynolds.

"I always wait up for my children at night. I like to be sure they are safely home", says one parent. Another replies:—"Well, I gave my daughter a latch key. She likes to feel that she isn't disturbing our sleep when she is at a party. Besides, we trust her to get home safely and on time". Trust is a stronger creative force than the concern that smothers confidence.

A Young People's group on one occasion made their plans and offered to put on the church supper for the community. "But who will help them do it!" exclaimed the older generation doubtfully. The feeling that *we* are essential dies hard.

No one is permanently essential. Only our love, our faith that they can, should and will grow beyond us, these are essential. Says Kahlil Gibran.

"Your children are not your children.

They are the sons and daughters of Life's longing for itself . . .

And though they are with you, yet they belong not to you.

You may give them your love but not your thoughts

For they have their own thoughts . . .

You may strive to be like them, but seek not to make them like you

For life goes not backward nor tarries with yesterday".

For teachers the task and the problems are similar. In a growing democracy, no qualities are more needed among its people than sound, independent judgment, the willingness to take the initiative and to be responsible for one's own actions. These qualities are learned, like so many others, by experience in thinking, planning and carrying out the activities that challenge the child's interest. Yet the old authoritarian attitudes and methods die hard. They are familiar; they seem to bring results; they demand less of us as teachers and they make possible the handling of larger groups such as the present educational system so often requires. Nevertheless education, in home or school, is not that which confines and molds children to our model but that which encourages them to develop and grow beyond us. "The world marches forward on the feet of little children". We may guide but must not hobble their feet nor keep them too long in the home paddock.

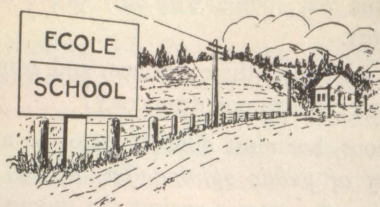
Teachers have one advantage over parents in meeting this problem of letting children grow up. As each class moves up or graduates, a new class arrives to take its place. Parents can not, so readily, achieve a second or a third family. They should therefore be sure to maintain outside interests which can take the place of the children.

"Nothing can take the place of my children" — say some parents devotedly.

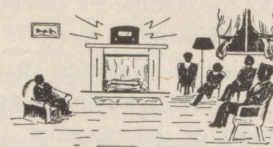
In your affections, no, of course not! But in your time, in your need for creative activity and something to "mother", yes definitely, because growing children need less and less mothering if they are to achieve manhood and womanhood.

Such outside interests, however, need not be entirely separate from our children's interests. Activities which we and they can share as equals include hobbies, handicrafts, photography and community projects in which both have a part:—playgrounds, dramatic organisations, salvage and other war services. All these allow for two generations working together. But, we cannot hold them to our interests or even to working with us. Ultimately they must find themselves and *their* place in the community life.

It takes courage, determination and even a certain measure of hard-heartedness to let our children step out alone to face the dangers and difficulties of the great big world. Children, too, need courage to face the rebuffs and uncertainties they will meet. To know that parents and teachers, alike, believe they can be self-reliant, to feel that the older generation wants them to achieve independence, is the best encouragement toward growing up that a community can give its children.



LIVING AND LEARNING



What Will We Do In '44?

A new kind of democracy is visualized based on the Forum idea, with a practical plan to make it work.

by R. Alex Sim

At Teheran, the Big Three, behind barbed wire and barricades, under an umbrella of fighters and medium bombers, secure from the prying eyes of Arabs and Persians, and the homicidal fingers of Axis agents, imposed upon themselves complete and effective quarantine whilst they decided when and how men should die, and planned in what way men should live.

Little democracy here, you would say. Yes, little enough. My vote and yours could scarcely register protest or approval at Teheran. Yet how completely the Big Three were guided by the voices of the people, expressed individually in such minute whisperings about the Second Front, about justice for Jews, about recognition, about governments people should choose, no one, not even they, could measure.

One does not take voting very seriously these days, important and necessary though it is. Not because of any lack of belief in democracy, but because the vote can only be regarded now as a symbol for a more complete and continuous participation in government. The adult education movement in Canada has come face to face with this problem of educating adults to want to participate, to train adults to be fit to participate, and finally, to fashion an instrument to make participation possible. It is the shaping of this instrument that is most likely to invite the attention of citizens who are concerned with the growing dilemma of our democracies, — a dilemma that grows in acuteness as we pass out of the tolerances of a laissez-faire economy of the nineteenth century into the intolerances of these later days of crisis.

We will be faced, to state it simply, in 1944 with momentous decisions. But unless the common people, that is the people who have no special privileges, are prepared to express their hopes and wishes these momentous decisions will be made without reference to the common man. If this is to be the case, one need scarcely add, the decisions are not likely to be made in the interests of the common man.

If we are to have a peace that sticks, if children being born to-day are to avoid the blood bath this generation and the last have had to suffer, if there is to be a good life for all, then the common people must not only vote wisely, they must do more than vote in '44.

The Forum Idea

At a meeting in Fitch Bay a few years ago, the chairman turned to me, and said:

"We want you to tell us about this Forum idea. How it works and where it is going to get us".

It was a fair enough question, but a tough one. Since then events themselves have partially answered it. At that time Farm Forums had completed their first year on the Eastern Network. Since then Farm Forums have grown into a nation-wide program, commanding the respect of farm and urban people alike. So successful were the Farm Forums that the city people have adopted the idea.

This winter there is no excuse for anyone who owns a radio wasting time on "soap operas." The Forum Idea has taken on so well that a national radio forum can be heard on the CBC on three consecutive nights.

On Monday nights — Farm Forum.

On Tuesday nights — Citizens' Forums.

On Wednesday nights — Labour Forum.

Recently I met a farm family that listens regularly to all three programs, besides belonging to a Farm Forum. The fact that the Forum idea is as much an institution to CBC listeners, as hockey on Saturday night does not explain the idea.

It is still an idea in the making, but a keen eye can now discern its outlines.

The idea of the forum came to us from the Romans, and they got it from the Greeks. It was long before a parliamentary system had been evolved. But there in the market place, under the strong Mediterranean sun, these early men settled their public questions. And their arguments took them into the deeper questions where they learned to examine the most profound problems of life. Their political problems were comparatively simple. Yet their political thinking was so deep, and so original that all who think of democracy to-day must turn for guidance to the Greeks for their systems of thought, and to the Romans for their systems of government.

To-day our political life is complex. If Canada functioned alone, it would be difficult enough to see that every citizen had a voice in government. So many new duties have been assumed by government, duties that formerly

were performed by business, or by individuals, or by the church, or by charity. The execution of these duties calling as they do for continuous executive direction can scarcely wait for parliament to meet. If parliament were in continuous session, these matters could scarcely wait for parliament to examine them in its own leisurely fashion. The establishment of day nurseries, the opening of new mineral and power resources, the building of roads, dry docks, air lines, and factories, to mention only a few, indicate the variety and complexity of the duties of government to-day. They may also explain the alarming decline of parliament, and the tremendous increase of duties assumed by the cabinet, and the controllers and administrators established under them.

Decisions are made by these men, (bureaucrats, we call them, or even more odious names) about milk subsidies, about the disposition of troops, about food, munitions, production quotas, other civilian needs, often without reference to any elected representative of the people. While it is true they must answer to Parliament for their acts, and must ask it for funds to function, they, nevertheless, exercise a power that can only bring concern to freedom-loving people.

The Farm Forums, and the Citizens' Forums both seem to want as much if not more planning than they now have. It is wise, therefore at the opening of a momentous year for us to ask ourselves a few heart-searching questions.

Even if Canada were a separate individual planet these political questions would remain. But we are not isolated. We are a nation in the British Commonwealth, and among the United Nations. The Big Three at Teheran made decisions that affected Canada which we must accept with good grace, hoping it was all for the best. This brings us to the core of the problem facing democratic governments. Namely, if our economic and social life is to be planned, avoiding the planless chaos of the past, how can our political machinery be adjusted to execute these plans effectively, and at the same time work in the best interests of the common man, remaining sensitive and responsive to his needs and wishes?

The Forum idea, I believe, is an attempt to answer this question. It aims to establish "market places", where these problems can be threshed out, in groups and localities in town and county, small enough and intimate enough to permit the fullest measure of freedom of expression and development. In addition to the Forums, in Quebec at least, the Community Schools and Film Circuits must be considered as a part of this growing adult education program.

Will It Work?

Will the idea work? We must make it work, or some idea like it, or we are lost. I would like to think that we are ready in 1944 for peace. But unless we are prepared for it with some new type of political machinery we will slip back into the individualism, the self-seeking, the booms, the depressions that led up to World War II. Unless we

are prepared in this way, peace will only prove to be a temporary make-shift.

How then can we expect these Forums, and adult education generally, to revitalize our democracy?

The most obvious, but most difficult factor to measure is *the development of public opinion*. Dr. M. M. Coady calls this 'inoculating the masses against the wrong ideas'. This is an important aspect of radio forums because it affects the casual listener as well as the member of an organized group. We all know that thousands of city-dwellers have a more sympathetic insight into the farmer's problems because they listen to the Farm Forum broadcasts. For this reason it is advisable that farmers who are within earshot of radio on Tuesdays and Wednesdays at 8:30 should listen to the Citizen's Forum, and the Labour Forum. We know that public opinion is the final arbiter of policy. Public and universal education of adults in citizenship is therefore the first line of the defense of democracy.

A more concrete out-cropping of the Forum idea has already emerged from the Farm Forums. At the Rural Life Conference at Ormstown last month it was suggested by Mr. J. D. Laing on behalf of the upper Tullochforum Farm Forum that a district committee should be organized representing all the Farm Forums of the area.

This committee would meet regularly to consider questions of farm policy, and local planning. Sub-committees could be set up to consider such individual problems as maple products prices, health and education planning, reconstruction problems, or any immediate issue that might arise on which the considered opinion of the farmers of the area was required. The committee thus established would quickly canvass opinion, summarize it, and place it before the appropriate official.

On the other hand, when the government wished to assign production quotas, or introduce some new policy, efficient machinery would be at their disposal to set a policy in motion.

If rural Canada were honey-combed by these district committees, which were federated on provincial and national levels, the government would have no alternative but to place representatives of these committees on the planning boards where policies are evolved. This would put an end to the comedy of policies being put forth by men out of touch with the practical problems of the farmer.

The extension of the thinking of these consultative and planning committees into more complex problems of foreign policy and economic planning would be the next step. It would be the super-structure for which the Forums are conceived.

If 1944 can witness the spread and consolidation of Forums among the common people of Canada, we need have no fear for the future of our freedom, and of our democratic institutions.

In Rural Quebec

A meeting of the Quebec Council of Community Schools is called for January 21st in Sherbrooke. Originally this meeting was scheduled for December 11th, but because of the 'flu epidemic and weather conditions, it could not be held. Elections of officers will take place and matters of policy will be discussed.

Of interest to Farm Forum members is the Eastern Canada Agricultural Conference to be held at the Chateau Frontenac, Quebec City, January 21st and 22nd. Mr. P. D. MacArthur is chairman of this conference. It is to be followed by the Annual Conference of the Canadian Federation of Agriculture. It is hoped that Farm Forum representatives from our province will meet with other Canadian farmers from all across Canada.

Things are happening around Athelstan these days. When Bob Taylor comes every month with his National Film Board movies, the children from all the schools in the surrounding district are brought to the Athelstan school. Well over 200 children saw the films.

An Athelstan Farm Forum, whose members are unable to leave their homes because of small children, have a correspondence course. Each family answers the questions and sends the answers to George Boyce, the secretary, who sorts them out and send the findings to the provincial office.

Farm Labour Needs Not Forgotten

Arthur MacNamara, Director of National Selective Service, discussed the farm labour situation at the opening meeting of the Dominion-Provincial production conference. He did not suggest that the farm labour problem had been solved, but he stated that 1944 production programmes could be planned without undue concern over a possible shortage of farm labour.

"We know that there are thousands of high producing dairy and live stock farms requiring permanent help", he said. "We considered this is the phase of the problem which must receive our most concentrated attention this Winter."

Mr. MacNamara said that during September and October nearly 12,000 men from all branches of the armed services were doing farm work, most of them on compassionate leave and working on their home farms. There were 2,500 soldiers out on the farm duty plan, under which men are detailed for emergency farm work as part of military duty.

"We had some apprehension about the quality of work which might be done by soldiers who were sent out to farm work," he said.

By special request, Herdman, which has just recently started having film showings is going to have them on Farm Forum "Fourth Nights" starting in January. The forums around here plan to have a rally.

A conference on Rural Reconstruction was held at Ormstown early in December. Representatives from all round this district — ministers, Farm Forums and Women's Institute members, and others gathered to meet with Dr. Thomas A. Tripp, an American rural sociologist. Dr. Tripp analysed what is happening to farms and farm life in America, and indicated what the future trends might be and what plans rural people should be considering. R. Alex Sim spoke on Farm Forums. Mr. J. D. Bryson was chairman of the conference.

An interesting visitor to Macdonald College was Miss S. A. Feeley, of the Dominion Bureau of Statistics, Ottawa. Miss Feeley was interested in learning more about the Quebec English-speaking film circuits.

Ontario Rural Organizations Grow

In three years Ontario credit unions have jumped from 45 to 150. Farm radio forums reported 320 meetings in one evening in November with 5,200 people in discussion. The Rural Co-Operator, official paper of the Ontario Federation of Agriculture, has tripled its circulation in three years. There are over 1300 Women's Institutes in the province.

Reports from all over the country indicated much greater satisfaction by farmers with this plan than we anticipated."

400,000 Men Left Farms

It was estimated 400,000 men, and, probably, at least 100,000 women, had left the farms since 1939. But thousands had returned from retirement to assist farm production.

"Older men and women realize this extra strain probably will impair their health," Mr. MacNamara said. "It may shorten their lives.

"But they have concluded that, in a total war, casualties are inevitable in all age brackets and on all fronts."

It was not pretended that the application of Selective Service Regulations had entirely prevented people leaving agriculture. However, the drain had been checked. Had the regulations not been administered as they were there would have been fewer people on farms today.

If a nation values anything more than freedom, it will lose its freedom; and the irony is that if it is comfort or money that it values more, it will lose that, too.

Somerset Maugham



THE COLLEGE PAGE

Scholarships

In the past there have been few scholarships or bursaries available for students at Macdonald College, but this is a situation which is gradually being rectified. A brief outline of the various sources of financial aid to students here may be interesting at this time.

In the degree course in Agriculture the only award which is given solely on merit is a bursary of \$200.00 offered by the Imperial Order of the Daughters of the Empire. This is granted to the British student who ranks highest in the final examinations of the second year of the course and is given without any reference to financial need.

Also awarded on merit, but for work done elsewhere, is the N.S.A.C. scholarship. This is given by Macdonald College to the student of the Nova Scotia Agricultural College who stands first in final examinations of the second year at that college and means free tuition for two years if the winner comes to Macdonald College to complete the course for the B.Sc. (Agr.) degree.

Macdonald College Bursaries

Under a fund recently set up by the University Scholarships Committee, the Faculty of Agriculture awards a number of scholarships and bursaries each year. Application for one of these may be made by any student of any year, including students entering the first year of the course. These bursaries are granted on the basis of financial need and academic ability and vary in value from fifty to one hundred dollars. Applications for one of these bursaries, or for renewal of a bursary, must be made each fall before the session begins.

Postgraduate Scholarships

For many years a generous benefactor, Mr. Walter M. Stewart has this year offered two postgraduate scholarships of \$500.00 each to encourage research at Macdonald College. One of these is offered to a degree graduate of the Institute Agricole d'Oka, one to a graduate of the agricultural college of Ste. Anne de la Pocatiere who wishes to do postgraduate work at Macdonald College. Candidates for these scholarships are recommended by the authorities of the two institutions in question.

La Corporation des Agronomes has recently announced the offer of three scholarships each year. One of these is tenable at Macdonald College, has a value of \$1200.00 a year and is renewable. Candidates must have at least a bachelor's degree and the final selection is made by the Corporation. The first of these scholarships is given to

permit an intensive study of the use of the muck soils of the Province of Quebec for vegetable growing.

In addition to the above, a considerable number of students are doing postgraduate work on fellowships and assistantships with funds supplied from various sources. Some are working on problems supported by grants from the Provincial Department of Agriculture: others are carried by grants from the National Research Council, the Canadian Council on Nutrition and certain commercial firms. These students are working on problems of specific interest to the organizations which supply the funds: the student receives enough to pay the expenses of his graduate course and is enabled to obtain a Master's or a Doctor's degree.

Aid to Farmers' Sons

Children of farmers of Quebec, the Maritimes, and the Ottawa Valley, do not pay any tuition fees during the first two years of the degree course. To all students in agriculture whose homes are in the Province of Quebec the Provincial Department of Agriculture grants \$9.00 a month, which is paid to the students in January and in May each year. All men students in agriculture, including degree and postgraduate courses, and in the School for Teachers, who are farmers' sons, receive a bursary from the College of \$15.00 each session: students of the Diploma Course receive \$10.00. Application for these must be supported by a letter of recommendation from the agronomist or agricultural representative of the student's home district.

Fisher Trust Fund Scholarships

In the Diploma Course two scholarships of \$75.00 each are available to sons of farmers living in Brome County in Quebec. These are tenable for two years provided the recipient does satisfactory work at the College.

Although the situation with regard to scholarships is better than it was a few years ago, there is still need for an increase in the number of bursaries and scholarships which may be held at Macdonald College. This is particularly true of Household Science where at the present time a bursary of \$50.00 for "a student from rural Quebec" is the only one available. Any post-war reconstruction plans should include provision for the establishment of a really worthwhile scheme of scholarships for deserving students, and when these plans are drawn up the special needs of students in agriculture should not be overlooked.

Don't Prune Apple Trees in Early Part of Winter

Due to the present shortage of help there is a tendency to begin pruning apple trees in December and early January, when the fall work is completed. Pruning just before the very cold weather sets in is likely to take a heavy toll in dead and injured trees, warns D. S. Blair, Central Experimental Farm, Ottawa.

A survey of the commercial apple orchards in some counties of Ontario last summer disclosed that wherever McIntosh, Fameuse, Spy and Ben Davis trees were pruned in December prior to the cold spell of December 20, 1942, the trees were either completely killed or badly injured. In one block of an orchard near Trenton, Ontario, thirty-one Spy trees twelve years of age were pruned early in December; the remainder were not touched until late winter. The thirty-one trees killed out in the summer to a tree whereas the unpruned trees showed no injury at all. In another block of Spys, fourteen years planted, the owner pruned twenty-five to thirty trees near the buildings in early December and did not get around to pruning the rest until the spring. The December pruned trees were all severely injured by trunk splitting and crotch injury and several were dead by mid-summer. In another orchard near Trenton, Ontario, severe trunk splitting occurred on McIntosh eight to ten years out that were pruned in the first and second weeks in December. Adjoining trees in

the same block of orchard which were left unpruned until spring showed no trace of injury. It is of interest to note that the McIntosh trees which were pruned the latest, about mid-December just before the cold spell, showed more injury than those pruned the first week in December. Older McIntosh trees in another block of the same orchard pruned in October did not suffer from winter injury. Location and cultural treatments were not contributing factors and there appeared to be just as much injury on trees pruned under one treatment as another. In an orchard near Whitby, Ontario, practically all the Fameuse trees thirty years of age, that were pruned the first three weeks in December, were injured severely. The bark loosened all around the trunks of these trees and, in some, well up the limbs. Trees pruned in November and after the first three weeks in December in the same orchard showed little or no injury.

These experiences indicate that severe winter injury resulting often in complete killing of the trees may occur if apple trees are pruned just before unusually low temperatures. It is clear that apple growers cannot afford to take the risk of fall and early winter pruning as the penalties are often very heavy and may even be disastrous when whole blocks of orchard are killed out. To be on the safe side no pruning should be done in the fall and early winter. In Eastern Ontario and Quebec no pruning cuts should be made until early March.

Tractor Assistance Policy Announced in Nova Scotia

The Nova Scotia Department of Agriculture has announced a "Tractor and Equipment Purchase Assistance Policy", which, in the words of the Minister, Hon. John A. McDonald, "should be of great assistance to the production efforts of our farmers and should result in a saving of money and labour".

This policy is designed to assist community organizations to purchase tractors and tractor equipment to increase production and supplement labour to help overcome the labour shortage through the following regulations:

This policy will apply only to agricultural societies, co-operative organizations, and other farmers' organizations recommended by the County Farmers' Association.

The Department of Agriculture will assist such organi-

zations in the purchase of tractors, tractor plows, and tractor disc or spring-tooth harrows.

The organization will pay not less than 1/3 of the purchase price in cash to the firm supplying the equipment before such equipment will be delivered. The Department of Agriculture will pay 1/3 of the purchase price, to the farm machinery company supplying the equipment, after such equipment has been delivered. The remainder will be paid by the organization on terms as arranged with the farm machinery company over a period not to exceed two years.

The maximum assistance the Department will give to any organization will be \$600.00.

This policy will terminate November 30, 1944.

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RURAL LIFE SERIES: *Education, Health, Recreation, in 6 units. Price 80 cents. (But residents of Quebec may obtain free by writing to Director of Protestant Education, Quebec, P.Q.)* Tells about the organization, management

and how to improve our rural schools; how to improve the health services of people in rural areas; why rural people should develop better recreational facilities and how to do so.

ECONOMIC SERIES: *16 printed pamphlets, Price 50 cents for the entire set. Published by the Canadian Association for Adult Education, 198 College Street, Toronto, Ontario.* These cover a number of specific problems of interest to the farmer. The nature of their content is indicated by the list of titles below: 1. Are there too many farmers? 2. Should Canada restrict the farming of sub-marginal land? 3. Will increased production benefit the farmer? 4. Should Canada encourage land settlement of immigrants? 5. Can we improve our taxation system? 6. How far will improved farm management methods help? 7. What does the farmer need in the way of credit? 8. Can the economic position of the farmer be improved through the medium of a government supported policy of research, experimentation and extension work? 9. What can we help to accomplish through Fairs and Exhibitions? 10. Are government grading regulations and marketing services of value to the farmer? 11. What are the conditions necessary for the efficient marketing of farm products? 12. What can the farmer gain through organization? 13. To what extent can co-operative organizations solve the economic problems of the farmer? 14. Is any form of governmental control or regulation over the marketing of farm products necessary, desirable or practicable for Canada? 15. If some form of regulation is adopted, what should it be? What shall we do about it?

To get one or all these outlines, simply write to the Macdonald College Journal, Macdonald College, Que., and enclose the necessary amount.

A GUIDE TO GROUP DISCUSSION: The technique of group discussion. How to organize a study group. Where to secure study material. How to conduct group meetings, "Neighbour Nights" or associated study club meetings. Suggested reference pamphlets.

Price 10 cents each : 7 cents in lots of 100 or more. A copy is mailed free with each order for the study outlines listed above.